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the OIL AND GAS JOURNAL

MAY 2 1941

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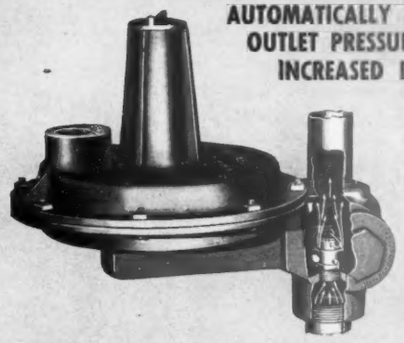

The EMCO Type B Ejector Service Regulator provides the gas distribution engineer with three definite improvements in service regulator performance—effective automatic loading, low shutoff and increased capacity.

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IT is of extreme importance that service regulators, whose principal function is to reduce higher distribution pressures to safe pressures for the meter and house piping, perform this task of reducing with a maximum of safety. Over-pressure in the house piping can have some very serious effects. First, leaks due to over-pressure or the meter or some other part of the system might result, also pilot valves may not function properly or be extinguished; and, even more important, burners might generate carbon monoxide while operating at a pressure higher than that for which they are adjusted.

In the past, several methods to avoid this over-pressure condition have been used. The mercury seal and deadweight safety valve methods have been the most commonly used. Both have certain inherent design defects which have worked against their universal adoption.

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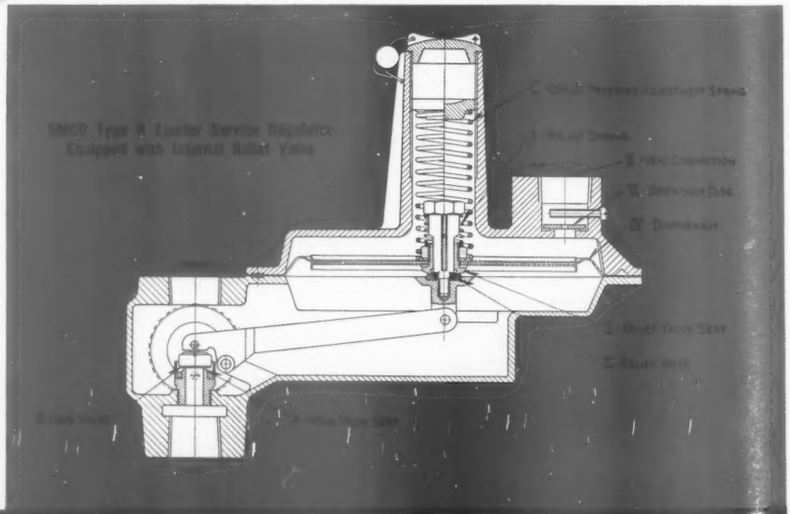
For complete information about the EMCO Type B Ejector Regulator with Internal Relief Valve request a copy of Bulletin 1065.

How it works —

Operation of the internal relief valve is explained by referring to the accompanying illustration. In normal operation, as a pressure regulator under standard conditions, spring I operates to hold valve III on seat II. Spring I is a heavy, non-adjustable spring, and can exert a very strong force to insure a tight closing of the valve III, on soft seat II. If because of dirt on the main regulator valve, or a nicked seat, main valve B fails to close, pressure will build up under the main diaphragm IV, above the normal lock off pressure. When this pressure increase, multiplied by the area of the large diaphragm IV, is sufficient to overcome spring I, valve III is raised off its seat, and the excess pressure is relieved through the fluted area of valve III, into the top diaphragm chamber. Thence, this gas flows out through vent connection V, by raising breather disc VI. Obviously, vent connection must be piped to a safe place for the venting of unburned gas. On relieving this over-pressure, spring I will close the valve. Valve III is guided accurately to its seat, thus insuring a positive shutoff.

It will be seen that spring I is selected to operate at a definite rise in pressure above a *normal lock off pressure*. Thus, the relieving pressure will vary with the adjustment pressure, insuring sufficient gap between the two under all conditions so that a too frequent blowing of the seal will not take place, but providing a positive relief below any dangerous pressure.



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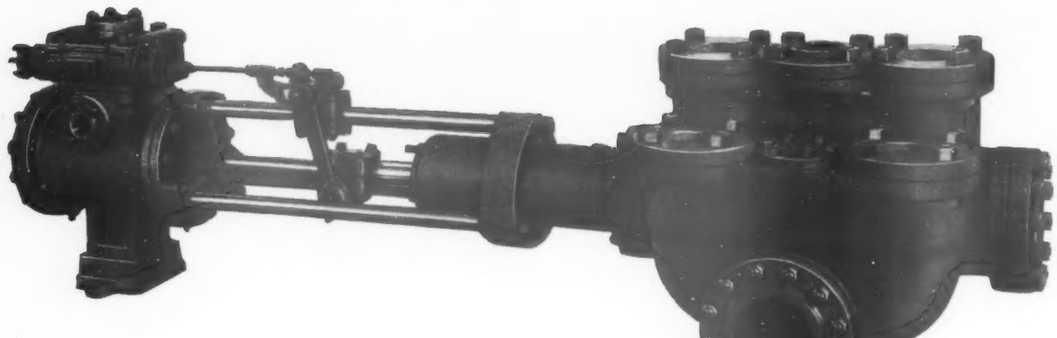
TRANSIT

PETROLEUM TAR TAR COAL TAR

PUMPS



Note particularly the steam jacketed liquid end on this pump.

This Side Pot design also features close clearance and is built in every detail for the service of pumping hot or cold liquids or semi-liquids in refineries and coal by-product plants. Also furnished without steam jacketing.

There is no trouble from expansion regardless of the heat of the liquid pumped.

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Trends

Widespread Market Advances Apply to Crude and Products

WITH widespread price advances market developments of the past week were reminiscent of 1936 and 1937 in several areas. Changes in crude-oil postings included 1 to 13-cent per barrel increases in California fields, an additional 10-cent rise for the Pennsylvania Grade crudes and a 5-cent advance in Illinois and Indiana schedules. The California postings were accompanied by a ½-cent advance in practically all West Coast domestic gasoline markets. Gasoline-price advances ranging up to 1 cent per gallon, materialized in several eastern states. Refinery and terminal prices on motor fuels in the Mid-Continent and Middle West were generally fractionally higher. Scattered price increases were reported in several other products.

CRUDE PRODUCTION *3,734,940 bbl. daily average—down 20,185 bbl. One year ago 3,847,577 bbl.*

CRUDE STOCKS *265,471,000 bbl. as of April 19—up 311,000 bbl. One year ago 254,881,000 bbl.*

GASOLINE STOCKS **96,647,000 bbl. as of April 26—down 1,252,000 bbl. One year ago 103,587,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *94,732,000 bbl. as of April 26—down 904,000 bbl. One year ago 102,513,000 bbl.*

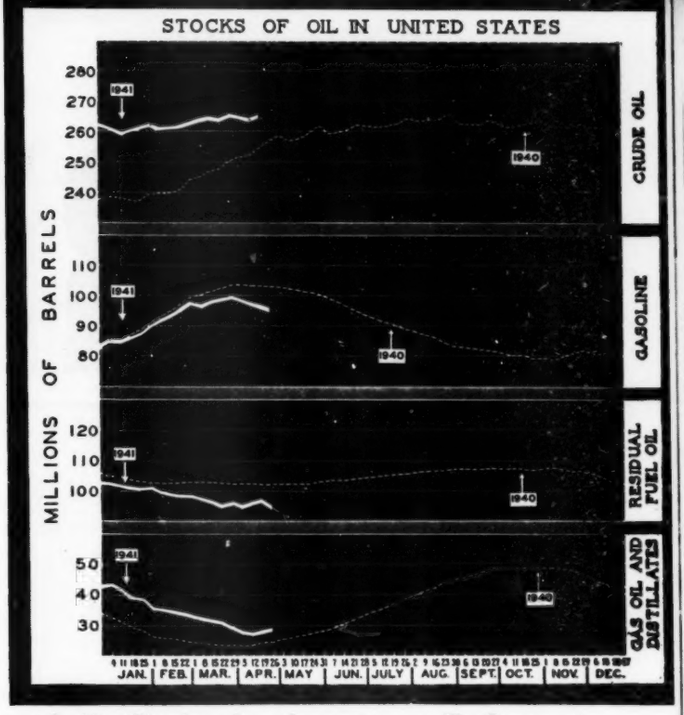
GAS OIL AND DISTILLATES *29,543,000 bbl. as of April 26—up 1,133,000 bbl. One year ago 24,758,000 bbl.*

REFINERY RUNS *3,675,000 bbl. daily week ended April 26—down 30,000 bbl. One year ago 3,555,000 bbl.*

*Includes 6,932,000 bbl. aviation motor fuel, up 93,000 bbl. Year ago 5,118,000 bbl.

The California crude advances were not uniform as to fields but generally were greatest in the low-gravity and intermediate grades. The upward adjustments, it was explained, were in line with changes that have developed in recent weeks pertaining to sales of finished products. The West Coast advances follow those made earlier in the month east of that area. It was predicted that substantial advances in West Coast fuel-oil quotations will materialize soon. Stocks of California residual fuel oils are approximately 10 million barrels under a year ago. The Bureau of Mines has predicted an increase of 15 per cent in residual fuel-oil consumption for the second quarter of this year, following a 9 per cent gain for the first quarter.

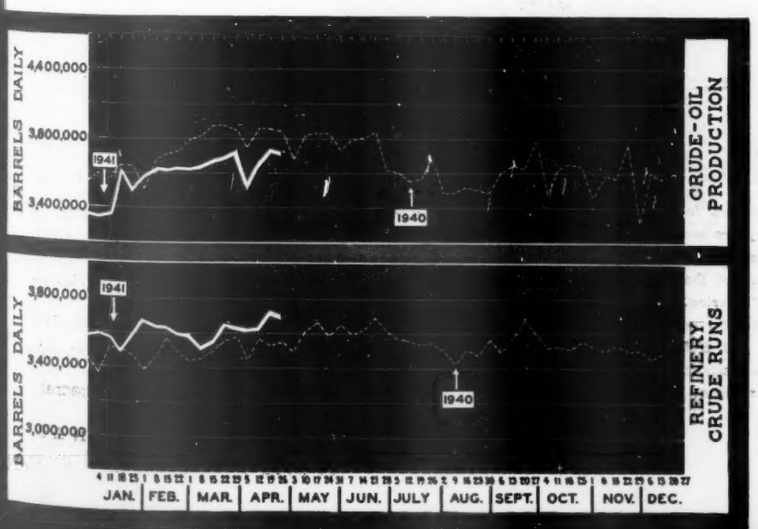
The latest advance in Pennsylvania Grade postings was brought about by a strong demand for most grades of lubricants centering in the better grades of neutral oils.



DAILY AVERAGE PRODUCTION FOR WEEK

	Apr. 26, 1941	Bur. Mines Apr. est. of demand	April state allowables	Apr. 19, 1941
Arkansas	71,830	75,700	72,024	71,630
California	601,975	596,300	571,500	620,125
Eastern fields	120,200	124,400	.....	119,200
Illinois	327,345	336,000	.....	324,165
Kansas	213,400	200,700	210,700	218,500
Louisiana	306,050	299,700	300,893	307,880
North Louisiana	*70,800*	.....	.....	*69,580*
Louisiana Gulf Coast	*235,250*	.....	.....	*238,300*
Michigan	37,100	44,000	.....	37,405
Mississippi	27,635	20,300	.....	22,750
Nebraska	4,150	4,300	.....	4,200
New Mexico	110,750	109,000	110,000	110,320
Oklahoma	415,075	429,300	400,000	413,800
Rocky Mountain states	104,230	114,300	.....	101,950
Texas	1,395,200	1,355,300	1,325,291	1,403,200
East Texas	*374,000*	.....	.....	*374,450*
West Texas	*248,550*	.....	.....	*251,675*
North Central Texas	*130,450*	.....	.....	*132,550*
East Central Texas	*77,150*	.....	.....	*80,375*
Texas Panhandle	*80,600*	.....	.....	*80,625*
Texas Gulf Coast	*391,050*	.....	.....	*389,800*
Southwest Texas	*93,400*	.....	.....	*93,725*
Total United States	3,734,940	3,709,300	.....	3,755,125
Total production, January 1-April 26, 1941		393,688,531 bbl.		
Same period last year		409,336,225 bbl.		

The most discussed situation having market significance applies to the movement of crude oil and refinery products from Gulf Coast refineries and terminals to Atlantic seaboard points. This tanker movement normally totals around 1,200,000 bbl. daily. The requisitioning of tankers for defense and war service, it is feared, will shortly create a bottleneck for which some solution will have to be found. In this connection it is understood that one company is preparing to move approximately 20,000 bbl. daily of East Texas crude oil north by pipe line for final delivery at a New Jersey refinery which is now receiving 10,000 bbl. daily by pipe line from the Mid-Continent. Other companies have checked the possibilities of a similar movement and have found that there is practically no excess pipe-line capacity available at this time east of the Ohio line through which to make deliveries to Atlantic seaboard refineries. This situation has resulted in predictions that additional pipe lines east of the Mississippi River will be built this year.



SPARKS . . . FROM THE NEWS

ANESTHETIC: Laboratory workers have discovered a possible new use for gasoline. Used on white rats, as an anesthetic, the rodents went under in 4 to 7 minutes, and came out in about the same length of time, and without visible unpleasant reactions, not even nausea.

PROBLEM: Tanker requisition by the military creates a transportation problem in the coastwise movement of more than a million barrels of petroleum daily. A pipe-line solution is complicated by the fact that idle capacity of eastern lines connecting to middle western systems is less than 50,000 bbl. daily.

OUTSIDE OBSERVATION: Congressman Cole, chairman of a subcommittee that has been investigating the oil business from every angle, summed it up when he reported Tuesday that "the petroleum industry apparently is in shape to meet almost any conceivable demand made upon it in these serious times."

GOOD START: April's market advances in the fields, plants and stations covered the entire country and got May off to a good start Thursday.

NO MENACE: Recent Trenton completions at Salem should allay fears of another flood of oil from Illinois. The area, however, does continue to have small-pool discoveries.

POOR STRATEGY: A prominent economic geologist considers that for Japan to seize the Netherlands East Indies would be like stealing second with bases full and the ball in the pitcher's hand.

NO FAULT: It will not be the fault of land men, geologists and drillers if oil is not discovered in the near future in western Nebraska.

PIPE-LINE STATE: Iowa, which hopes to become an oil state soon, already is a pipe-line state. It will be served with 750 miles of gasoline line before the year is over and 200 miles of additional natural-gas line will be built during the summer.

NO PINCH: By and large, the oil industry doesn't seem to be threatened with inability to secure needed materials due to operation of the priorities system. There might be an occasional delay, but generally speaking, adequate supplies are assured.

PIPE LINE COMMUNICATION: Reports at the annual P.I.E.A. meeting in Tulsa indicated that pipe lines aided by modern radio equipment may become a major source of communications.

COOPERATION: If the Inglewood field extends into Culver City, Calif., we may expect an epidemic of moving pictures dealing with oil, with realistic sound effects.

GAS DEMAND: Natural-gas producers and transporters hold their annual meeting in Dallas starting Monday, with the most favorable demand situation in their history.

GERMAN SUPPLIES: Every report adds to the supposed production of synthetic petroleum products in Germany. The actual output of these costly products is a closely guarded military secret.

COLE COMMITTEE AT MAGNOLIA . . .

The Cole committee, while on its southern trip following the compact meeting at New Orleans, visited oil fields in the Southwest. Here they are seen, together with oil men, at Arkansas' Magnolia field, witnessing a bottom-hole-pressure test. In the picture are John R. Philyaw, Mid-Continent Oil & Gas Association; E. J. Layton, clerk of the Cole committee; Alex M. Crowell, petroleum engineer, state commission; Charles A. Wolverton, member, Cole committee; O. C. Bailey, chairman, state Oil and Gas Commission; Ed Swanson (pointing finger), Petroleum Conservation Division, U. S. Department of the Interior; J. B. Holt and Howard Waddle (with backs to camera), petroleum engineers, state Oil and Gas Commission; Edward A. Kelly, member of Cole committee, and W. C. Blewster, Magnolia banker (looking at Waddle)

Geology of Western Nebraska Demands Careful Prospecting

By W. V. HOWARD

FOLLOWING the current lease play along both sides of the Cambridge arch of western Nebraska, it is probable that many months will be spent in detailed geological and geophysical work before much significant drilling will be done. There is no difficulty in locating the major structure as a great granite ridge forms a continuation of the Barton arch of Kansas and links it to the Black Hills where granite outcrops reach elevations in excess of 4,000 ft. A test drilled by the Ohio Oil Co., in Sheridan County, near Rushville, was reported as reaching the granite at 2,825 ft., or about 1,050 ft. above sea level. The test was 1 Demmer, 22-31n-46w. This test also penetrated one of the thickest sections of Tertiary rocks yet found in Nebraska and found the normal thick Cretaceous section entirely missing so that Tertiary rocks rested on the Morrison.

Results in this test and in others drilled along the high show that practically all the producing horizons which might be expected to occur in this area, both in the Pennsylvanian and older beds, as well as in the Jurassic and Cretaceous, pinch out against the flanks of the high or were truncated by erosion. The only known producing horizon which may be expected over the arch is the basal sand, sometimes occurring as granite wash, known as the "Reagan" or "La Motte" sand.

As a result of the irregular deposition of beds and the unconformities in the section, prospecting will not be directed toward finding highs on the arch so much as toward locating minor structures along the flanks as well as stratigraphic traps due to lensing or truncation of porous beds.

Owing to the almost universal occurrence of Tertiary beds in the region and the fact that their structure and thickness do not reflect underlying structures, surface geology is virtually useless in the region. The fact that the possible producing limes often occur in contact with no intervening shales and also that they may be cut out locally by erosion makes geophysical work difficult of interpretation. It may be expected that stratigraphic tests followed by detailed subsurface geology will be of greatest importance in locating producing areas.

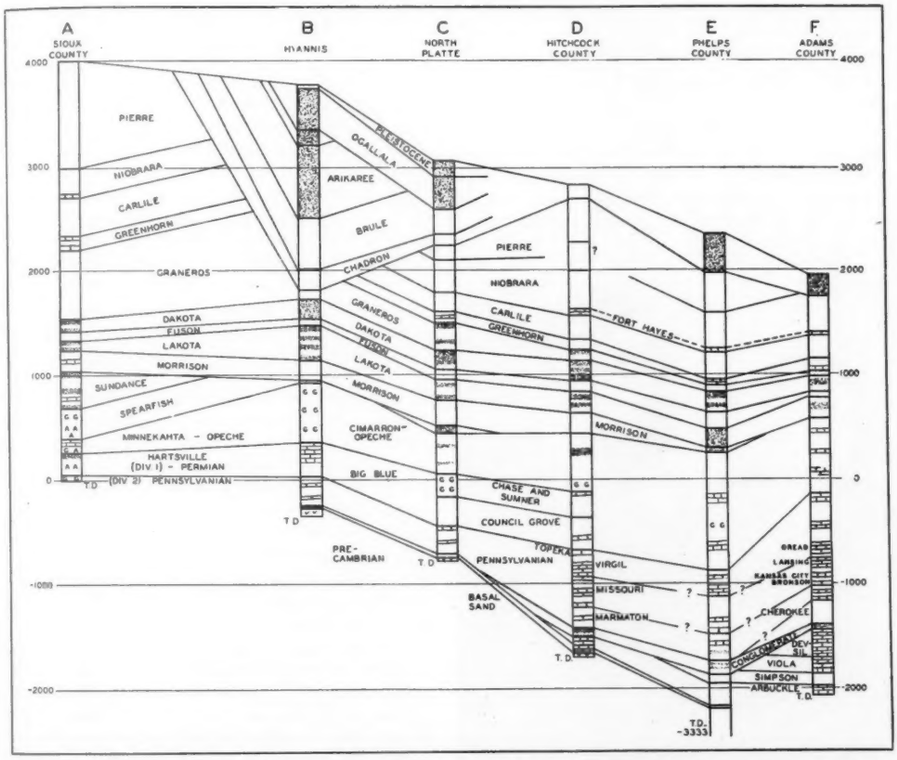


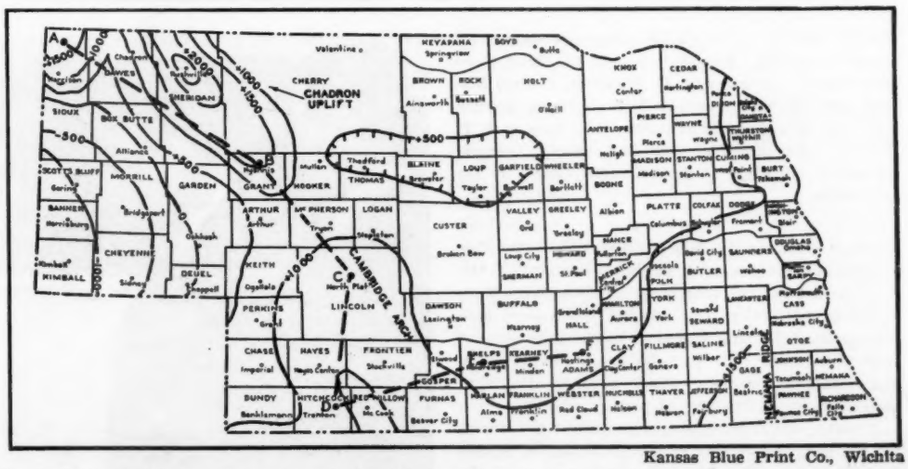
Fig. 1—Cross section along Cambridge arch. The wells included are: (A) Huber 1 Morgan, SW SW 32-35n-56w, Sioux County. (B) Byrd-Frost 1 Abbott (Hyannis) NE NW 22-24n-38w, Grant County. (C) Helmerich & Payne 1 Hansen (North Platte), SW NW 24-15n-31w, Lincoln County. (D) Price 1 Carter, SE NE SW 35-2n-32w, Hitchcock County. (E) Trees 1 Bergman, SW 23-6n-19w, Phelps County. (F) Prouty 1 Katzberg, SW 26-7n-10w, Adams County

Cooperation With Geological Survey

In an area of complicated geology where subsurface geology is the most important tool for the discovery of production, detailed and accurate correlations are essential. In the comparatively thin Nebraska section, there is a major unconformity at the base of the Tertiary and the thickest Tertiary section is found on the crest of the high. There is another major unconformity at the base of the Mesozoic section and the Triassic, Jurassic and Cretaceous sections all pinch out irregularly. A third unconformity separates the Pennsylvanian formations from those below and in the Paleozoic there are almost as many breaks in the section as there are formations.

Major companies with large geological staffs can prepare subsurface maps following examination of samples from all wells, but the independent is not in so fortunate a position. Nor can he hope to get much help by picking up geological logs from various sources. As an example, Union Oil Co. 15-1 Agate may be cited. This well was a rank wildcat drilled on the Agate anticline in NW SE SE 15-28n-55w. Besides the operators, Gulf Oil Corp. and the Nebraska Geological Survey made a study of the samples and prepared logs. The base of individual formations as presented in these logs shows variations of as much as 290 ft. (See Table 1.) Eventually, agreement will be

(Continued on Page 24)



Kansas Blue Print Co., Wichita

Fig. 2—Map of Nebraska. Contours on top of Dakota sandstone. Location of cross-section in Fig. 1 is also shown

Pipe-Line Problems Take Stage At Electrical Group Meeting

By PAUL REED

WITH a program giving special attention to problems relating to communication and cathodic protection in connection with pipe-line operation, members of Petroleum Industry Electrical Association met in Tulsa April 23-25. More than 350 registered for the fourteenth annual convention of this organization, carried on by electrical men in the pipe-line industry who have recognized the importance of an interchange of ideas regarding the use of electricity throughout all phases of the petroleum industry. Altogether more than 450 visitors came to the exhibits of manufacturers which have become a feature of these conventions in recent years. Although the convention was officially held for 3 days, gatherings held the day before the opening sessions were well attended. These included an informal discussion by cathodic-protection men who have formed an important section of the association through merging the Mid-Continent Cathodic Protection Association with P.I.E.A. Because of the significance of the afternoon session devoted to cathodic protection and of the discussion conducted the following morning, men in the section hope that more time may be given next year to the numerous problems which arise in the rapid development of this technique.

Arrangements for the convention were made by a committee headed by F. P. O'Connor, Stanolind Pipe Line Co. For the coming year, C. O. Diller, Lone Star Gas Co., succeeds O. V. Summers, Texas Pipe Line Co. as president; L. G. Wainman, El Paso Natural Gas Co., becomes vice president; J. F. Collerain, Houston Pipe Line Co., continues to serve as secretary-treasurer. R. C. Appling, United Gas Pipe Line Co., is chairman, general committee, in charge of arrangements for the meeting next year at Shreveport, La.

Gear Succeeds Scherer

L. F. Scherer, Texas Pipe Line Co., who presided over the cathodic-protection meetings as section chairman, is succeeded by H. C. Gear, Lone Star Gas Co.; F. J. McElhatton, Panhandle Eastern Pipe Line Co., is vice chairman, and G. R. Olson, United Gas Pipe Line Co., continues for another term as secretary of the cathodic-protection section of P.I.E.A.

In Petroleum Electrical Supply Association, which convened concurrently, G. T. Brundret, Hubbard & Co., succeeds J. H. Jamison, Square D Co., as president; E. T. Gunther, General Cable Corp., is vice president, and C. A. Heiser is secretary-treasurer.

A high point in the meeting was the address by A. A. Nichoson, director, Texas Co., "The New Industrial Frontier," in which he said that the solution of the problem of breaking through the frontier erected before the industry may be found largely in a study of human relations.

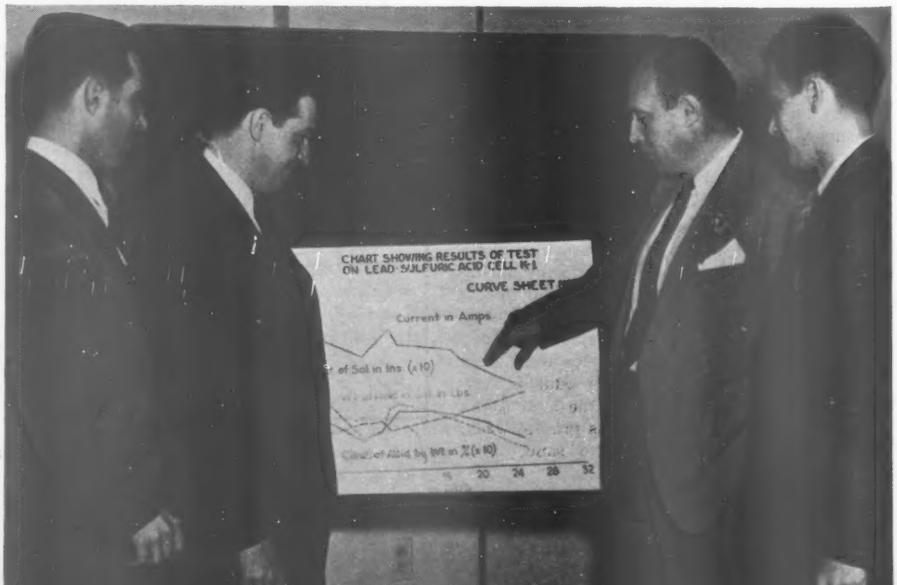
"Unless we anchor to this permanent, immovable rock of sound, healthy relationships, rather than to continue loosely to moor to the shifting rafts of materialism, we may ultimately discover that this magnificent structure which we label business and industry may eventually become a prey to insiduous onslaughts of international origin, which already have made themselves felt.

"Let us remember that for over 300 years the American people have been seeking happiness and harmony and have found to a large extent that these reside within the confines of this technological development called industry. And let us remember that, in the final analysis, those two great component elements of business, capital and labor, have ever stood on common ground and reached for a common objective; and that separately or united they represent nothing but human energy intelligently directed in an effort to improve conditions for the public," he said.

A description of the practices followed by Western Union Telegraph Co. in utilizing complex automatic equipment was presented by C. E. Davies, assistant to vice president in charge of operations of that company.

Attention was directed to the possibility of using radio equipment for the purpose of communicat-

Above: Officers of the P.I.E.A. discuss program after business meeting. Seen here are C. O. Diller, Lone Star Gas Co., president; L. G. Wainman, El Paso Natural Gas Co., vice president; J. F. Collerain, Houston Pipe Line Co., secretary-treasurer. With them is F. P. O'Connor, Stanolind Pipe Line Co., chairman, general committee, in charge of general arrangements for the convention



Below: Four convention attenders discuss a chart following the session on cathodic protection. Here are H. C. Gear, Lone Star Gas Co., recently elected chairman of the cathodic protection section, P.I.E.A.; F. J. McElhatton, Panhandle Eastern Pipe Line Co., vice chairman; L. F. Scherer, Texas Pipe Line Co., retiring chairman, and G. R. Olson, secretary

ing through the pipe line itself, in a paper by J. D. Browder, Oklahoma Gas & Electric Co., which dealt with results obtained in experiments carried on in the field. He pointed out that it is now possible to employ a number of different carrier frequencies on a pipe line for the purpose of providing electrical communications and other low-energy channels, all operative without mutual interference, between stations distantly located along the line. Starting with experiments on 700 ft. of 4-in. pipe, experiments were extended later to 14 miles of 8-in. pipe. As the result of this work it was concluded that pipe-line radio deserves further development. "From all theoretical considerations, frequencies in and below the broadcast band, that is ranging downward from approximately 1,500 kc., appear to be ideally suited to pipe-line purposes. Frequencies much higher than 1,500 kc. would apparently give rise to excessive space radiations, since the higher the frequency the less the tendency to confine its propagation along the conductor."

Electrical men connected with all phases of pipe-line operation gave close attention to data presented by David Harrell, Houston Pipe Line Co., in "The Application of Nonpolarizing Electrode and Electrolysis Measurements." In this he showed the correlation between measured current in the pipe line, produced by electrolytic action in the soil near the pipe, and the chemical equivalent in terms of pH.

In "Spot Coating and Cathodic Protection," Donald B. Good, Texas Empire Pipe Line Co., pointed out that experience shows that complete coating of a pipe line is likely to prove to be the most economical practice both in first cost and in maintenance cost. Lighter-weight pipe can be used and cathodic protection can be more readily applied. Coating costs for a partially coated line are not materially less. The cost of cathodically protecting bare or partially coated lines far exceeds the cost of similar protection as applied to a well-coated pipe line.

C. H. McRaven, United Gas Pipe Line Co., Shreveport, La., in "Solid and Resistance Bonding of Pipe Lines in Cathodic-Protection Applications," stated that proper bonding procedure between protected and foreign lines prevents all possibility of damage to foreign facilities. The actual effect of the cathodic unit upon electrical conditions of the lines in the vicinity of the crossing was discussed in detail and a method of control was proposed.

In a paper, "Chemical Ground Anodes," A. W. McAnneny and D. H. Bond, Texas Pipe Line Co., said that based upon electrochemical passivity, a new type of anode has been developed which will eliminate many of the objectionable features of the present type of anode installations. While the chemical anode, in its present state of development, is probably not the complete answer to the ground-bed problem, it is definitely a step in the right direction.

Hugo Wahlquist, Edison Electric Institute, discussed problems encountered in coordinating power and telephone circuits when lines for these two purposes are carried on the same poles. Provisions which should be made for the lighting of plant facilities under defense conditions were described by Roy Thompson, General Electric Supply Co. Highway safety was discussed by George Rief, director of traffic, Tulsa.

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Defense Needs Will Boost Oil Demand, Say N.P.A. Speakers

By J. P. O'DONNELL

CLEVELAND, Ohio, Apr. 25.—A probably large increase in demand for petroleum products will develop as a result of our defense program but it will be one that can be met with ease, E. DeGolyer of DeGolyer, McNaughton and McGhee, Dallas, Tex., told the National Petroleum Association's thirty-eighth semiannual meeting.

P. M. Robinson, assistant to Dr. R. E. Wilson, petroleum consultant for the Office of Production Management, assured the 400 oil men present that there was no lubricating-oil-supply problem in another address.

After reviewing the splendid record of oil in the first World War, Mr. DeGolyer considered estimates of consumption in the current war. He reached the conclusion that "the American petroleum industry in 1941 may be faced with a maximum increase in average demand of 20 per cent of which the greatest single item is heavy fuel oil. The industry is able to meet this demand with ease. What the future requirements may be is less definite but it is possible that demand may increase in an upward spiral and, even now, we should be taking thought for the possible expansion of our present facilities." He added that "it is not difficult to see future annual requirements at the rate of 200,000,000 barrels of aviation fuel alone."

In evaluating the oil position of the various countries, Mr. DeGolyer said that the German position is not too easy but there has been no evidence of shortage; it seems probable that much of Italy's troubles can be laid to a real shortage; Japan, as a belligerent, would seem to be hopless since war would cost her her major sources; growing demand and seeming inability to increase production make the U. S. S. R. of questionable value to the Axis.

Western Hemisphere oil security in this war is apparent from the fact that 70 per cent of world production is in the United States-Latin America area. The Near East, apparent goal of the Axis, "represents one of the greatest potential oil areas of the world. In no other region has such a limited amount of prospecting yielded such magnificent results. It would not be improbable for the center of gravity of the world's oil production to shift to this area within the next 50 years," Mr. DeGolyer stated.

E. DeGOLYER

PHILLIP M. ROBINSON

Two of the principal speakers at the National Petroleum Association meeting, who discussed estimates of consumption of gasoline and lubricating oils in the current war

Lubricating Oils

In discussing lubricating oils, Mr. Robinson said that "it seems probable that total consumption including Navy contracts, Army Air Corps and all governmental agencies may increase to a figure of approximately 830,000 bbl. during the next fiscal year. This represents 2.25 per cent of the total lubricating oils produced during 1940. This is not much over half of the decrease in exports for the year 1940 from 1939. When we consider that exports decreased about 1,500,000 bbl. or 4.05 per cent of our total production, it is clearly apparent that the oil industry will be able to meet her own military demands plus those of the British Empire and her allies without jeopardizing our industrial and civilian needs or putting any undue load on our industry." The problem for the industry is not quantity but quality, he added.

With respect to diesel oils, Mr. Robinson said that such oils containing additives are now allowed but requirements are stringent. He also said that the trend in aircraft oil is definitely not toward additives, both branches of the services feeling that a change in type might compli-

cate the already difficult task of expansion.

Both services are looking toward simplification, Mr. Robinson said, and there is talk of eliminating S.A.E. 20 and 40, leaving S.A.E. 10W, 30 and 50. Some believe that 10W is too heavy for certain services in extremely low temperatures and that kerosene or gasoline will be added to reduce the viscosity. This has led to considering dilution of S.A.E. 30 to make 10W, thus eliminating another grade. There is hope that an additive can be developed that will make an oil suitable for both diesel and gasoline engines, thereby effecting another reduction in the necessary grades.

War and Oil

Lloyd Lehrbas, Associated Press foreign correspondent, told of blitzkrieg experiences in Poland, where lack of gasoline created utter confusion by prohibiting mobile evacuation and stalling motorized armament and where oil installations were the primary objectives of Nazi parachute troops. Mr. Lehrbas predicted that Turkey would offer little opposition to a Nazi march to Iraq and doubted if Russia would offer much objection if Germany took over the vital Dardanelles.

Mr. Lehrbas also expressed doubt that oil installations would be destroyed in the Dutch East Indies, according to reported plans if the islands are invaded. He said that similar plans in Poland met half-hearted execution so that the Nazis got most of the oil wells and refining capacity intact. He also said that he was present when boasts of plans to destroy Rumanian wells were made and called attention to the fact that these plans were never concluded.

Rumanian oil shipments to Germany, held to a low figure by lack of barges, face further decline due to the sinking of barges to block the Danube by the Yugoslavs, he said. He predicted that exports of oil-well equipment to Russia will likely be canceled as a result of the recently concluded Russo-Japanese pact.

Lauren D. Lyman, assistant to the president, United Aircraft Corp., blamed the lag in U. S. aircraft production to our refusal to accept repeated warnings. Brinley Thomas, visiting professor of economics, McGill University, Montreal, said that nothing has contributed more to the texture of British morale than the attitude of the United States. In answer to Colonel Lindbergh's suggestion for a negotiated peace, Mr. Thomas recalled that Munich witnessed a negotiated peace.

Joseph C. Rovensky, director of the financial division, spoke on the mutual interests of the Western Hemisphere in the absence, due to illness, of Nelson A. Rockefeller, coordinator of commercial and cultural relations between the American republics. Mr. Rovensky, who is also vice president in charge of the foreign department, Chase National Bank, said it is important to unite the 21 Western Hemisphere republics for, while at the moment they are safe from attack by arms, all nations are subject to attack on other fronts, economic and ideologic. Diversion of shipping from Western Hemisphere trade is the greatest problem in promoting hemispheric commercial relations and is a problem that will become more acute before it is solved.

No Government Control

"At the moment it appears that chances are against government control unless we get into a shooting war," N. A. Weber, president of the association and vice president of the Pure Oil Co., said. If that happens, the president has authority under the lend-lease act to control all industry. Yet there are some at Washington who want government control to aid defense and prevent waste. "When one examines the operation of government for the last several years, one wonders what would happen to the oil industry so far as waste is concerned if it was operated as loosely as some government projects."

Since a firm that might refuse to comply with orders may be taken over by the government, Mr. Weber said that labor should be controlled and not allowed to strike. He also made the significant observation that "we do not choose to go to war but when we see Britain, the only citadel of freedom still standing against this mad drive of cruel force, we will come to realize that we do not, in fact, have any choice."

Engine-Testing Symposium Features Technical Session

CLEVELAND, Ohio, Apr. 25.—The acute need for tests that will evaluate actual performance characteristics of lubricating oils was discussed by speakers during the symposium on engine testing at the thirty-eighth semiannual meeting of the National Petroleum Association held here this week.

The keynote of the symposium was sounded by H. C. Mougey, technical director, research laboratories division, General Motors Corp., when he said, "Conventional laboratory tests are useful as 'identification tests,' but most of these tests are of little value in predicting the performance of the oil in an engine." While none of the speakers disputed this conclusion, there was some difference of opinion on the value of single-cylinder-engine tests. Mr. Mougey's paper is published on Page 38 of this issue.

A. O. Willey, Lubri-Zol Co., Cleveland, said that older basic items of specification are inadequate and that proper evaluation should consider oxidation, corrosion, film strength, wear rate, oiliness, demulsibility, detergency, ring sticking and varnish formation. While emphasizing the importance of the last three, he said that they have not as yet been found capable of successful evaluation by simplified laboratory tests.

Mr. Willey described single-cylinder-engine tests conducted by his company wherein the following inspection items are considered: Piston discoloration, ring sticking, ring-surface condition, deposit behind rings, oil-ring filling, underhead deposit and bearing condition. When properly correlated with field-service results, he said, such items can be used to predict detergency, oxidation and ring sticking. The loss in weight of the bearing inserts is unquestionably a measure of bearing corrosion under conditions existing in a crankcase, he said.

L. A. Blanc, Caterpillar Tractor Co., said his company submits an oil of S.A.E. 30, 20 or 10 grade with an unfamiliar additive to three tests: A special ring-sticking and endurance test on a 5¾-in.-bore single-cylinder diesel test engine lasting 1,020 hours; three high-load tests of 3 hours duration on specially fitted 5¾-in.-bore single-cylinder diesel test engine and a 240-hour bearing corrosion and deposition test on a D-4400 model four-cylinder 4¼-in.-bore diesel test engine. When the additive is known, a shorter test supplants the first. On satisfactory completion of these tests, the oil is placed in the field and at the end of 1,000 hours the engines are disassembled and inspected.

He cautioned against attempts to shorten procedures by running tests under accelerated conditions which, in the large majority of cases, will change the nature of deposits and lead to evaluations which will prove false under service conditions.

In order to show the increasingly difficult nature of the task of lubricating a modern car, Joseph A. Moller, Pure Oil Co., Chicago, showed that eight typical passenger-car engines have, since 1930, increased the maximum brake horsepower from 65 to 90, an increase of 38 per cent; the revolution per minute at rated brake horsepower from 2,850 to 3,600, an increase of 26.4 per cent; the maximum piston speed in feet per minute at rated horsepower from 3,175 to 3,750, an increase of 18.1 per cent; the ratio of maximum brake horsepower to piston displacement in cubic inches from 0.28 to 0.425, an increase of 34.1 per cent. At the same time the ratio of the area in square inches of the crank end of the connecting-rod bearing to the maximum brake horsepower has decreased from 0.29 to 0.175, a decrease of 65.6 per cent.

Oil-Performance Criterion

Mr. Moller said that the criterion of oil performance is best predicted on the "after test" condition of the engine and its parts and made the interesting prediction that "the time is not far off when the quality of engine materials, design and construction will be described by means of, or in terms of, standardized lubricating oils."

Hugh Heminway, Kendall Refining Co., Bradford, Pa., said that fleet testing has provided a good method of evaluation that is accompanied by good reproducibility. He emphasized that new or reconditioned engines operated less than 50,000 miles should be used, that oil consumption should be kept within 20 per cent in 500 miles, that the engine should be stripped of gadgets and that at least three or four vehicles should be used. He said that field results showed less of a spread between the oils than laboratory tests.

C. W. Georgi, Quaker State Oil Refining Corp., Emlenton, Pa., said that while single-cylinder-engine tests are desirable because they are inexpensive, there is question of correlation between results obtained in such tests and in tests conducted on full-scale engines. Single-cylinder engines, because of greater heat-dissipating capacity, operate at much lower temperatures, he said, and therefore it is unnecessary to raise both oil and jacket temperature to get upper-temperature limits in line with those of full-scale engines.

If attention is paid to temperature conditions, good correlation is possible, he said. Single-cylinder engines do not effect oxidation to the same degree as multicylinder engines with correspondingly less deterioration. Therefore, he concluded, single-cylinder engines tend to overrate oils.

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Alberta Considers Pipe-Line Tax

EDMONTON, Alta.—The Alberta Provincial Government is proposing a special tax of $50,000 for the current year on the Valley Pipe Line Co. to finance a chair of petroleum engineering at the University of Alberta. The Valley Pipe Line Co. is a wholly owned subsidiary of Royalite Oil Co. and operates a crude oil and naphtha common-carrier pipe-line system between the Turner Valley field and Calgary.

New officers of the Natural Gasoline Association of America who, with other active members are informally discussing problems for the coming year. From left to right are: Harry Ells, Cities Service Oil Co., vice president; H. H. Beeson, Sabine Valley Gasoline Co., Inc., vice president; R. E. Miller, Hanlon-Buchanan, Inc., president; George P. Bunn, Phillips Petroleum Co., retiring president; W. F. Lowe, secretary-treasurer; S. S. Smith, Shell Oil Co., Inc., former president; J. W. Vaiden, Skelly Oil Co., vice president; J. R. Jarvis, Lone Star Gasoline Co., vice president

Special Products From Natural Gasoline Command Attention

By W. T. ZIEGENHAIN

DALLAS, Tex., Apr. 25.—Operators, executives and service-company representatives attending the twentieth annual convention of the Natural Gasoline Association of America held here the past 3 days unanimously lauded the large and interested attendance, the cooperative exchange of technical ideas and the invaluable practical value developed from the "Operating Kinks" session. A fitting background for all this is the rising natural-gasoline market but there certainly is no disposition to celebrate yet. Instead, there is an intensification of the characteristic "will to work" among these men that seems to distinguish the annual meetings of the association. This intensification is prompted chiefly by the desire to bring the operations of this industry into complete unison with the national-preparedness program. The various speakers reflected this by calling attention to the industry's ability to (1) recover large quantities of isobutane and other fractions for the subsequent alkylation of these to make aviation gasoline, (2) the segregation of unsaturated, light hydrocarbons to be processed into synthetic rubber, and (3) the liquefaction of other light byproducts of natural gasoline to be converted into chemicals or product bases of one kind or another.

A feature of the meeting was the exhibition of several commercial resins of unusual qualities, oil-resisting "rubberized" cloths and buna rubber in the manufacture of which the light petroleum hydrocarbons played an important role. This was presented by Dr. F. H. Dotterweich of Texas A. & I. College (The Oil and Gas Journal, Apr. 24, p. 39).

Preliminary to this exhibit and discussion, Elmer Schmidt, vice president of the Lone Star Gas Co., dealt specifically with "Natural Gas and Gasoline" in national defense (The Oil and Gas Journal, Apr. 24, p. 40) and then remarked that the liquefied-petroleum-gas portion of the industry is a principal contributor to the national-defense program and that the potential production of this industry is 33 times its present actual output. George P. Bunn, president of the association, commenting from the floor of the assembly, also reminded those present that by physical and chemical means it is at least theoretically possible to supply even our motor-fuel needs from natural gas, thereby avoiding the need for producing a single barrel of crude oil for the manufacture of motor fuel.

Earlier, Mr. Bunn had discussed the recovery of these products from natural gas in a recycling or distillate-plant operation as one of the economic factors discussed in the president's address (The Oil and Gas Journal, Apr. 24, p. 37).

Spirited Discussion

Then, as if to avoid making appear too easy the recovery of commercially pure methane, ethane, propane, normal butane, isobutane or any one of the many hydrocarbons in natural gas, many comments were directed to J. A. La Fortune, vice president of Warren Petroleum Corp. and chairman of this session of the meeting. Later, Paul M. Raigorodski, vice president of the Glen Rose Gasoline Co., received similar comments as chairman of the session at which papers were presented by G. L. Brennan, Phillips Petroleum Co., on "Safety Standards in the Liquefied-Gas Industry," and H. A. Montgomery and C. E. Wharton, Hanlon-Buchanan, Inc., on "Low-Temperature Fractional Analysis, Apparatus and Procedure."

In general these comments reflected the difficulty of separating the individual hydrocarbons to effect commercial purity and then stressed the need to handle and transport each in suitable containers to avoid accidents. More specifically stated, J. L. Foster, Lone Star Gasoline Co., called attention to controlling the proportion of butane and propane in a blend designed to meet current liquefied-gas specifications. He suggested the observance of two sets of specifications, one winter and one summer. He justified the suggestion on the basis that a cylinder containing a blend of butane and propane and loaded at 125-lb. pressure will pop with a normal change in the temperature of the weather.

Additional comment on these points was developed after the reading of a paper by H. W. Harts, Warren Petroleum Co., on "Close Fractionation in the Manufacture of Special Products at Natural-Gasoline Plants" (The Oil and Gas Journal, Apr. 24, p. 41). In this paper Mr. Harts describes the practice at one of the company's plants of recovering commercial isobutane. He specifically warned against attempting to separate isobutane from the normal butane in a simple, one-pass distillation procedure.

Later G. W. McCullough, Phillips Petroleum Co.,

(Continued on Page 76)

Many Oil Executives Pay Tribute to Conry

OIL men from New York, Louisiana, Texas, Illinois and other sections of the country joined with Oklahomans in Tulsa April 25 to pay tribute to J. J. (Jack) Conry who retired as president of Carter Oil Co. May 1. Festivities included a reception followed by a banquet where the honored guest expressed thanks for the opportunities made available to him during his 40 years of active service. Each of several speakers praised Mr. Conry's record as an employe and in later years as an executive of operating subsidiaries of Standard Oil Co. (New Jersey).

Joining 200 officials and employes of the Carter company in paying tribute to Mr. Conry and in welcoming the new administration headed by L. F. McCollum, president, were the following men from Standard of New Jersey headquarters in New York:

E. J. Sadler, vice president and director, who presided at the banquet as "gang pusher"; E. Holman, Wallace E. Pratt and F. W. Abrams, directors; E. F. Johnson, general attorney; T. R. Armstrong, an officer of several subsidiary companies; F. W. Pierce, industrial relations manager; Northrup Clarey, assistant to the president; W. R. Finney, manager of pipe-line operations, and J. L. Cluley, auditor.

H. F. Miller, a director of the Carter company, presented Mr. Conry with a set of golf clubs and bag, a gift from employes, and L. G. Owen, Carter attorney, presented an embossed "lease" on the honoree's services for 40 years to Standard of New Jersey and a "release." The "release" was executed signifying Mr. Conry's retirement from active service. Practically every Carter employe had signed the instruments.

Before coming to Tulsa, the party of New York officials visited the Louden (Illinois) field which was discovered by Carter. The visitors were met in Effingham by Mr. Conry; Mr. McCollum; O. C. Schorp, vice president and director of Carter; Mr. Miller; H. F. Moses, Carter chief geologist; F. M. Darrough, assistant chief counsel; Paul E. Griffin, executive vice president of Oklahoma Pipe Line Co., and J. R. McWilliams, new manager of production for Carter.

Division officials and employes who came from Illinois to the Tulsa party for Mr. Conry were:

William A. Watkins, southern division superintendent; R. E. Damp, eastern division superintendent; Walter Davison, division chief counsel; R. J. Sullivan, division engineer; M. W. Fuller, division geologist; R. M. Payne, division land man; W. W. Breedlove, division chief scout; E. Ray Shaw, regional personnel manager; W. W. Latimer, division clerk, all of Mattoon, Ill.; F. W. Bruner, Altamont, St. Elmo district superintendent; O. D. Harper, Effingham, St. Elmo assistant district superintendent; H. R. Shannon, Effingham, drilling-tools superintendent for exploratory drilling; C. C. Cornwell, drilling-tools foreman; F. B. Graham, El Dorado, Dix district superintendent, also the following employes whose service with Carter paralleled that of Mr. Conry, L. L. Clark and Frank Roome, Mattoon; E. A. Hayes, R. O. Mattingly, James E. Workman and Frank Smith, of St. Elmo, and A. A. Montgomery, Prairie Creek, Ind.

Humble Oil & Refining Co., Houston, Tex., affiliate of Standard of New Jersey, was represented at Tulsa by H. C. Wiess, president, and James Anderson, vice president.

S. W. Day, vice president, represented Standard Oil Co. of Louisiana.

Louark Producing Co., which was merged into Carter Oil Co., effective May 1, was represented by P. K. Cochran, R. A. Howe, L. S. McGee, Mr. McWilliams, V. C. Megarity, Cecil Morgan, O. C. Nonweiler, B. Peters and W. C. Taylor.

Mr. Griffin, H. P. Henninghausen and Bruce Ramsey represented Oklahoma Pipe Line Co. while Ajax Pipe Line Corp. was represented by J. R. Doles and S. V. Kane.

J. J. Conry, Tulsa, signing a "release" on his services symbolic of his retirement May 1 as president of Carter Oil Co. The witness is E. J. Sadler, vice president and director of Standard Oil Co. (New Jersey), who was toastmaster at the banquet honoring Mr. Conry

Preponderant Oil Supplies Should Give Allies Victory

AFTER reviewing the distribution of the world's petroleum supplies and transportation facilities, Basil B. Zavoico, geologist, Chase National Bank, New York, told the Tulsa section of the A.I.M.E. on Monday evening that "so long as the war is fought along the lines of the last 2 years, Germany possesses ample supplies of liquid fuels. If, however, the war develops into a continuous major struggle, it is to be doubted if Germany could supply her air force and motorized land equipment for any appreciable time." Obviously, continued the speaker, if Germany consolidates her victories in the Balkans and Africa and can convert the Mediterranean into a German lake, "Iraq could effectively supply the German and Italian war machines on a much larger scale, but inasmuch as most of the producing, refining and transportation facilities would undoubtedly be destroyed, it probably would require at least 2 years to reconstruct them on a reasonably workable basis."

By fighting the war according to German plans, England is at a disadvantage, particularly since she must exercise the greatest caution in bombing German plants in the occupied territory. If the United States enters the war wholeheartedly, Germany would ultimately be forced to surrender because of her limited supplies of petroleum, even if she had Iraq. The efficiency of the German petroleum engineer, however, must not be underemphasized.

With regard to the other combatants and possible combatants, Mr. Zavoico considers Italy to be entirely dependent upon Germany for oil from now on. Japan is highly vulnerable because of her lack of petroleum supplies and if she seized the East Indies, she would have to use her fleet to convoy oil supplies thus leaving Japan itself unprotected. The Russian position is questionable. She could probably fight a short major war but transportation difficulties are so great that she probably could not maintain the offensive on a great scale for long.

Following the war, Mr. Zavoico sees the United States and Latin America in even a more dominant position during the reconstruction period. He also foresees as a result of the war a great advance in petroleum synthesis, probably mainly from gas. The exigencies of war will shorten a normal development period of two or more decades into a very few years.

Postpone Cole Report to 1942

WASHINGTON, D. C., Apr. 29.—Representative Cole today obtained House approval to postpone until January 3, 1942, the date of making a report by his petroleum subcommittee. The date previously had been extended from January 3 to May 1, 1941.

Congressman Cole said no more hearings are contemplated and that the committee will make a report on the southeastern pipe-line situation shortly and reports on other phases of the oil investigation will be made at later dates, adding:

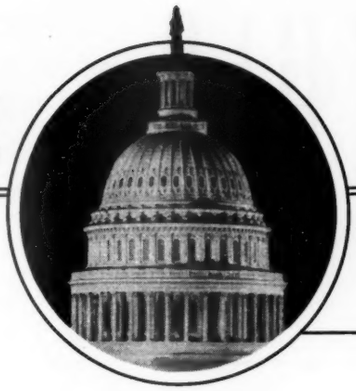
"It is pleasing to the committee to be able to report at this time, however, preliminary to our final report, that the petroleum industry apparently is in shape to meet almost any conceivable demand made upon it in these serious times. The conduct of certain states toward conservation of this most important natural resource is not what it should be, but we are hopeful before our final report is made that the situation will be materially improved."

Representative Wolverton, committee member, said that on its recent trip the committee was gratified by the progress in oil conservation, and that the state authorities and the industry have cooperated with federal authorities in producing this highly beneficial result. He said:

"We were amazed at the progress that has been made in the last few years in obtaining finer and better grades of gasoline in larger quantities per barrel of crude oil than heretofore. What is true of this one product taken from crude oil is equally true of the numerous and varied products originating from petroleum. The advancement that has been made in all branches of the oil industry has been so great that it is almost unbelievable. Suffice it to say that our observation of what the oil industry is doing and is prepared to do in behalf of national defense gives assurance and courage to all who are interested in our national security and defense. The oil industry can be depended upon to do its patriotic part in fulfilling whatever task is laid upon it in the days that are ahead."

Observers interpret this action as meaning that there definitely will not be legislation providing federal control of the oil industry at this session.

Watching WASHINGTON



By HENRY D. RALPH

Functioning of the priorities system might impose some trouble in obtaining supplies, though no undue hardships are expected. . . . Industry can aid by outlining needs and estimating requirements.

WASHINGTON, D. C., Apr. 28. — Operation of the priorities system may cause the oil industry some difficulties in obtaining supplies and equipment, but the situation is far from critical and should not cause any real hardship or delays.

Machine tools and many of the alloys used in valves and other refining and drilling equipment are now subject to priority orders to insure early fulfillment of defense contracts, but the Office of Production Management is prepared to see that the oil industry gets sufficient supplies for normal operation and maintenance. Requests for material to build new refineries not needed for national defense may create special problems.

Neoprene is one material subject to priorities which the oil industry will have to do without. The entire production of this type of synthetic rubber is needed for military uses, chiefly for making bulletproof gasoline tanks for airplanes, and none is available for civilian use. Therefore, oil hoses will have to be made of something else when present stocks of dealers are exhausted, and, while hose made of natural rubber or other synthetic rubbers may not be quite so satisfactory nor last as long as neoprene hose, the industry got along without neoprene for a long time and will have to do so again.

Machine tools of the sort used in oil-company repair shops are also under strict priorities, but a company showing a real need for a new machine tool can get special consideration for its request, though there may be some delay in delivery.

No Blanket Designation

There is no such thing as a blanket designation of the oil industry as essential for national defense which would entitle oil companies automatically to obtain whatever supplies they may need, but there is ample recognition of the importance of oil to industry in general and in every priority order (except neoprene) provision has been made for meeting at least the minimum requirements of such vital civilian industries.

The priority system is a little complicated, but this fact makes it quite flexible and adaptable to changing conditions. The Army and Navy Munitions Board has issued thousands of priority orders for articles on its so-called critical list, mostly strictly military items, and these orders require the contractors to work on specified defense contracts ahead of all other orders. This type of priority order should not affect the oil industry much except to the extent that some of its suppliers, perhaps instrument makers, are booked up with Army and Navy orders.

On other items the Division of Priorities of O.P.M. has jurisdiction, and it has three methods of procedure. It issues blanket ratings under which all manufacturers of certain articles needed for defense (shipyard cranes are an example) may obtain needed supplies at once, and the producers of such supplies are required to fill such orders ahead of all others not having higher preference ratings. Another method is the issuance of an individual-preference certificate to provide supplies for a manufacturer who does not have a primary Army or Navy contract but whose output is needed for the defense program. An example of this would be the construction of an electric power plant to supply power both to defense contractors and for civilian use. An individual-preference rating might be obtained by a manufacturer of oil-well or refinery supplies if he could show that an order from an oil company must be filled promptly to prevent curtailment of needed oil production.

Industry-Wide Control

The most important authority exercised by the O.P.M. Priorities Division is what is known as industry-wide control. Under this the Government technically confiscates an entire industry and its output, but actual control goes no farther than allocation of the output to various uses. The aluminum, magnesium, nickel, nickel-steel, neoprene, and machine-tool industries are among those subjected to industry-wide control. In each case the Priorities Division has set up a schedule of preference ratings for various types of uses of the commodity, and the schedule differs with each commodity.

In aluminum, for instance, an A-10 rating has been given to all Army, Navy and British orders not specifically having higher ratings. This permits the O.P.M. to give a higher rating, say A-5, to a particular nondefense order of great importance. The oil industry is assured of sufficient aluminum for maintenance and replacements because its needs could be shown to come under one of the lower ratings, some of which are:

B-2—for repair or replacement parts for existing apparatus, equipment, and devices which must continue to function in order to preserve essential services and maintain maximum production of goods.

B-3—for products essential to the protection of public health or safety.

B-4—for standard apparatus, equipment, or devices which cannot be redesigned to use substitute materials without serious interruption of current production and for which there is substantial use in national defense or in plants chiefly devoted to national defense.

Thus aluminum for the oil industry would ordinarily take a B-4 rating, though in emergencies it could get a B-2 rating, and in special cases the O.P.M. could give a higher rating to a particular order.

Operation of Control System

Under this industry-wide control system, an aluminum producer or fabricator receiving an order from a manufacturer of oil-industry equipment would apply the proper preference rating himself and fill the order when its turn is reached. Ordinarily, however, he would be required to limit deliveries to a percentage of that customer's 1940 average monthly consumption. In the case of a B-2 rating the percentage is 80, and in the case of a B-4 rating he would supply only 60 per cent of the 1940 average.

In the case of nickel-steel, a B-2 rating is given replacement parts to maintain essential production, and a B-3 rating for new apparatus necessary to preserve essential production. Thus the descriptions of the various ratings are not identical in all industry-wide control orders, but in each one there is provision for releasing some supplies for maintenance of industries essential to defense and to civilian business. O.P.M. officials feel that the ratings so far issued give ample consideration to the maintenance needs of the oil industry, and if any serious difficulties should develop they can issue special individual certificates.

Where the priorities system may pinch the oil industry is in the construction of new refineries and in obtaining new drilling equipment using alloys. Where a new plant is to produce something essential for national defense, such as aviation gasoline, toluene, or butadiene, an individual-preference-rating certificate could be obtained without difficulty which would permit the constructing or supplying company to obtain the necessary materials. However, where the new production or refining capacity could not be shown to be essential to the defense program the equipment supplier might have difficulty in obtaining certain special steels and alloys, and he might be given a low preference rating which would require him to wait some time before getting delivery.

The petroleum unit of the Production Division of O.P.M. works closely with the Priorities Division on all priority matters affecting the oil industry, and can serve as an intermediary for any oil company unable to obtain needed supplies which are under priority orders.

While the oil industry itself does not purchase

(Continued on Page 24)

STATE CAPITALS...

PENNSYLVANIA

AN APPROPRIATION of $25,000 was asked in the legislature last week to defray expenses of an investigation into activities of the Associated Petroleum Industries of Philadelphia, Pa. Rep. Elmer J. Holland, sponsor of the resolution, declared that the organization "is an unincorporated association of executives representing the major oil and gasoline companies, and interested in advancing the policies of those companies."

CALIFORNIA

ECONOMIC balance of the oil industry in California cannot be maintained even under the increase in prices for both crude oil and gasoline posted April 24. A large group of California oil producers are demanding a further increase of crude-oil prices, according to Lawrence Vander Leck, newly elected president of the Oil Producers Agency. He has appointed a special committee from among the agency's membership to conduct an investigation of operating costs in California fields in order to prepare an authoritative survey of the producer's current economic status.

While commending the Standard Oil Co. of California for its initiative in increasing the posted price as a step in the right direction, Mr. Vander Leck declared that the increase fell short of meeting the industry's needs.

Members of the inquiry group include Ralph B. Lloyd, Lloyd Corp., chairman; L. L. Aubert, Bankline Oil Co.; C. C. Spicer, Republic Petroleum Co.; Dana Hogan, Hogan Petroleum Co.; C. A. Johnson, Holly Development Co., and Lloyd Williamson, California Star Oil Co.

"On February 1, 1940, Standard sharply reduced the posted price for crude oil at the well in California, and California producers, especially those with heavy oil, have been fighting a losing economic battle ever since," Mr. Vander Leck said. "Every cost factor in the business has moved steadily upward, and the present increase in the posted price is wholly inadequate to meet these rising costs, and further adjustments upward are imperative.

"The consuming public has had the advantage of extremely low prices which have prevailed on petroleum products, prices totally out of line with prices obtaining on all other basic commodities," he pointed out, "but the producer cannot efficiently operate his properties, continue remedial work on his wells, constantly employ labor and maintain a steady exploration and development program for new sources of petroleum, unless he obtains a return for his product which will permit him to meet these steadily increasing costs of doing business," Mr. Vander Leck concluded.

THE CONSERVATION COMMITTEE of California Oil Producers has voted to continue its customary method of allocating crude-oil production, rejecting the recommended plan to increase the allocation to heavy oil which was submitted earlier by its allocation committee.

Joseph Jensen, chief petroleum engineer of the Tide Water Associated Oil Co., presented the case for the recommended plan, but withdrew his support when it was apparent that the committee was generally against it.

Opposition to any change in plan was voiced by representatives of San Joaquin Valley fields, who based their objections generally on the statement that there did not appear to them to be any great demand for heavy oil, at least not enough to justify a change in the uniform program which has been operating satisfactorily for the past 2 years.

The state quota was held to the same figure for May as during the current month—571,000 bbl. per day, with a reduction of 2 bbl. per day in the top allotment, to 142 bbl. daily, and a further reduction in the allotment to intermediate wells, which will make room for a net addition of 4,586 bbl. daily from new wells and recompletions.

TEXAS

SPECIAL HEARINGS have been set by the Railroad Commission on several matters involving producing operations. The docketed hearings are:

May 2—Rules amendment for Alta Mesa field, Brooks County, request of Standard Oil Co. of Texas.

May 3—Special regulations for Yoakum County, West Texas, request of Bond Oil Corp.

May 5—Increased allowable for Gulf Oil Corp. 59 T. D. Davis, Big Creek field, Fort Bend County; casing program amendments for Abell field, Pecos County, request of Magnolia Petroleum Co.; special rules for area surrounding Nelson Oil Syndicate 1 Blount, Young County.

May 6—Production from two separate horizons for Lockhart Oil Co. 1 Anderson, 6 Purl and 1-B Purl, Agua Dulce field, Nueces County; Pure Oil Co. petition to clean waste oil out of earthen trap at its Smith's Bluff refinery, Jefferson County; increased allowable for Fain-McGaha Oil Corp. 1-C fee, Archer County; rules for area surrounding Atlantic Refining Co. 1 Dean, Block 4, League 89, Lipscomb County School Land, Cochran County.

May 7—Increased allowable for Sullivan City field, Hidalgo County, request by Rado Refining Co.; rules for area surrounding Shell Oil Co., Inc. A-1 Coleman, A.T.N.C.L. Survey, Archer County; special rules for Von Ormy field, Bexar County.

AVERAGE NET DAILY production of 1,417,222 bbl. was fixed for Texas fields during May in a new Railroad Commission proration order issued late last week. The May allowable figure is 43,863 bbl. higher than the April 1 proration order provided.

Railroad Commission engineers said reduction of a normal 3.5 per cent underproduction would result in an average daily output of 1,367,619 bbl. during May, 14,581 bbl. less than the Bureau of Mines calculates the May demand.

Nine shutdown days were ordered for the East Texas and the remainder of the state's fields, excepting the Panhandle, where four production holidays will prevail in May.

DIRECTS RECOVERY STUDIES . . .

S. T. YUSTER, State College, Pa., is assistant professor of petroleum and natural gas engineering, school of mineral industries, Pennsylvania State College. He is in charge of the research program on the secondary recovery of oil by water flooding which is sponsored by the state and the Bradford district research group. Mr. Yuster received his bachelor's degree in chemistry and chemical engineering from North Dakota College and his Ph. D. degree in physical-organic chemistry from the University of Minnesota.

LOUISIANA

PRODUCTION OF 320,324 bbl. daily during May was assigned to Louisiana fields last week by the conservation department. The allowable for May is 19,431 bbl. daily higher than allocated in April and is 24 bbl. per day higher than the Bureau of Mines estimated demand for crude from Louisiana this month.

The greater portion of increase, 16,832 bbl. daily, was allotted to South Louisiana fields while North Louisiana was allowed an increase of 2,599 bbl. daily.

The May quota for North Louisiana was set at 70,301 bbl. daily, against 67,702 bbl. for April. South Louisiana fields were assigned a May total of 250,023 bbl. daily, compared to 233,191 bbl. in April.

ARKANSAS

A COOPERATIVE AGREEMENT between the Arkansas Oil & Gas Commission and the Department of the Interior has been made effective, providing a joint program of technical research of the behavior of petroleum reservoirs under varying conditions of development and energy drives. Bureau of Mines engineers and Arkansas engineers will collaborate in the study, and the bureau will publish the results.

ILLINOIS

AN ADMINISTRATION BILL levying a tax of 3 per cent on oil production in this state has been passed by the senate and is now pending consideration by the house.

An offset drilling bill has been advanced to second reading on the house calendar. The measure requires drilling of an offset test within 3 months after written notice has been given when a producing well is within 500 ft. of the property line of another tract of land leased for oil or gas production.

NEW MEXICO

DAILY PRODUCTION of 114,000 bbl., an increase of 4,000 bbl., was assigned last week to New Mexico fields for the month of May. Authorized production in May is 100 bbl. per day higher than the Bureau of Mines estimate of demand.

KANSAS

HIGHEST CRUDE-OIL PRODUCTION allowable in the history of Kansas, a permissible daily yield of 217,900 bbl., has been authorized for May by the state Corporation Commission. The May allowable is 7,200 bbl. daily above the April allocation.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Complete the Job

The petroleum industry has several accomplishments to point to as it completes one-third of the yearly lap this week. If the achievements are understood as to causes they can be made the basis for further gains.

The recent market improvement is the result of gradual adjustments in operations extending from the producing wells through the refineries to distributing facilities. Overproduction, which plagued the industry the greater part of the 1938-1940 period, has been succeeded by a balancing of operations from which everyone has benefited.

During the first quarter of 1940 crude-oil production expanded in excess of demands and inventories mounted. Gasoline production was excessive and stocks of that product increased to record levels.

The price charts give the results if anyone has forgotten what happened. The unwarranted operations of 1940's first quarter dominated markets for the entire 12 months which, judged by product demands, should have been one of the industry's best years.

The first quarter of this year was taken up in correcting some of 1940's mistakes. While the domestic crude-oil requirements so far this year have been less than those of the same period last year, supply and demand have been in balance for several months in most areas and confidence has returned to the raw-material markets.

Gasoline now occupies a stronger seasonal position than at any time since 1937 because refiners earlier this year were not compelled to absorb crude oil that they did not need and because they are not burdened with excess gasoline to be liquidated on a buyers' market.

The immediate objective should be to consolidate these gains and extend them in several directions in order to correct conditions which have carried over from 1940.

As indicated by the Bureau of Mines in its projection of crude-oil requirements for May and the first half of the year, operators must understand the unusual conditions brought about by a foreign war and a domestic defense program.

Defense activity accounts for a record growth in domestic motor-fuel consumption. Industrial and transportation operations in many fields have jumped to new peaks with a resulting large demand for heavy fuels which will expand further later in the year. Domestically, lubricants are having one of their best years.

But there have been other developments which are not so favorable in relation to markets. Foreign purchases of crude oil produced in this country have dropped to the lowest point since 1928, with substantial declines in exports of finished products. In contrast, imports are the heaviest in a decade.

This is why the Government says the demand for domestic crude oils the first half of this year will be 2 per cent less than for the first 6 months of 1940.

These analyses should serve to cool the excessive enthusiasm of those who are inclined to stress the favorable signs and ignore those with danger signals.

The war within the month has added Axis-invaded countries in continental Europe which will be compelled to carry on, as best they can, with a minimum of oil. The latest developments have greatly curtailed or stopped entirely the former oil movement in the Mediterranean, including the shipments from the Persian Gulf area to the British Isles. These changes point to increased demands from the Western Hemisphere.

This briefly covers the position of operators after 120 days of a year in which major oil trends are certain to continue to parallel international developments. The domestic industry, faced with increased operating costs, higher taxes and other problems, should quickly complete the job of getting its house in order.

Shell President Urges Transportation Unity

SINCE the close of the year, R. G. A. vander Woude, president of Shell Union Oil Corp., told stockholders April 16, "general industrial activity has continued to expand and there has been a substantial increase in demand for petroleum products.

This is attributable to a considerable degree to the progress in the national-defense program, the importance of which in the furtherance of the nation's preparedness requires no emphasis. The oil industry realizes this fully and was prepared to meet increased requirements of petroleum products on the part of the Army and Navy and of industry at large long before the need became generally apparent. The oil industry stands ready to meet all demands for direct and indirect defense purposes and without curtailment of civilian consumption. This it is able and anxious to do with its own resources without resorting to government financial support.

"In appraising the position of the oil industry in the national economy, it is interesting to observe that prices of petroleum products compare most favorably with other commodities.

"Using 1926 as a base with index 100, (exclusive of taxes), the United States Bureau of Labor statistics index of all commodities is currently 82, whereas the petroleum index is but 51, indicating that the wholesale price level for all commodities is 60 per cent above that for petroleum and its products. It is particularly noteworthy that prices of petroleum products have continued to decline although quality has been greatly improved over the past 15 years.

"Should one consider for the 5-year period (1934 through 1938) preceding the war as index 100, the wholesale price level for all commodities is currently 102.6, while that of petroleum and its products is 92.4, thus further illustrating that petroleum prices have continued to decline in the face of a steadily rising price level in the national economy.

"The task of solving the problems confronting the oil industry and meeting the prospective requirements has not been facilitated by the various antitrust suits to which the industry has been subjected. Cooperation in its true sense is of primary importance for the successful fulfillment of the national-defense program. This means cooperation between industry and Government on the one hand and between industry and labor on the other hand. In this direction lies the way to a better understanding of each other's difficulties, and this understanding is absolutely vital at the present moment when the nation is faced with critical issues of tremendous import.

"We are living in times of great change; some find it easier to adjust their views than others. But the essential appears to be cooperation of all elements; industry and Government must work more closely than has been the case in the past, and it is hoped that from this will emerge a better understanding of each other's problems.

"Closer cooperation and good will between different industries are also essential. The oil industry through its many activities from oil well to consumer has contact with almost every other industry. For example, the railroads derive a large income from the oil industry, and yet we have for some time observed certain activities by the railroads to create difficulties for the oil industry in its endeavors to develop the most economical means of transportation. This has been particularly evident recently in connection with the proposed construction of pipe lines in the southeast, notwithstanding the fact that these lines under present conditions would be an important contribution to the national defense since they would greatly relieve ocean transportation and assist the already difficult tanker situation.

"The results for the first quarter of this year have been somewhat less favorable than for the similar period of last year. The trend this year promises to reverse that of last year, when the most favorable results were achieved in the early part of the year; it is anticipated that for the second quarter of this year the results should be somewhat better than for the first quarter with indications that favorable conditions will carry through for the balance of the year. It is however difficult to make predictions at this time for the latter half of the year in view of the uncertainties as to general conditions, prices, taxation, etc."

California Oil Agency Elects New Officials

LOS ANGELES, Calif., Apr. 25.—Lawrence Vander Leck, vice president and director of Fullerton Oil Co., was elected president of the Oil Producers Agency of California at its annual meeting here April 23. (He is the subject of this week's biographical sketch on Page 69.)

Rush M. Blodget, executive vice president and general manager of the agency since its organization in 1932, was again reelected to that position. Four vice presidents of the agency were chosen. Reelected were M. A. Machris, Bandini Petroleum Co.; L. A. Cranson, Honolulu Oil Corp. and C. A. Johnson, Holly Development Co. C. P. Watson, Seaboard Oil Co., who has been a director for several years, was elected a vice president.

W. A. Russell, Seaboard Oil Co., was reelected secretary-treasurer and D. P. Murdy, Bandini Petroleum Co., assistant secretary-treasurer. Four new directors are: Dwight G. Vedder, Vedder Petroleum Corp.; Dewitt Knox, MacMillan Petroleum Co.; W. D. Waltman, Franco-Western Oil Co. and Cecil Rood, McVicar-Rood interests.

Eight directors whose terms had expired were reelected. They are: A. E. Bell, A. E. Bell Corp.; Mr. Blodget; Mr. Cranson; J. J. Doyle, Doyle Petroleum Co.; W. H. Geis, Arrowhead Oil Co.; R. E. Havenstrite, California Western Oil Co.; Mr. Johnson, and the new president.

DEATHS

CHRIS C. RONEY, Electra, Tex., a retired oil driller, died last week. He was 70.

ALEXANDER JARECKI, 75, president of the Jarecki Manufacturing Co., and a director of several other industrial firms, died this week.

H. W. BARTLETT, field superintendent for Houston Oil Co., died in a hospital in Big Spring, Tex., of burns suffered when he stumbled carrying a blazing container of gasoline from a building. The wife and two children survive.

B. C. McDONALD, superintendent of Tex Harvey Oil Co., Salem, Ill., died April 22 in Salem. He left his widow and four daughters.

NOEL B. BARNSDALL, 61, wealthy retired oil man, died at his home in Beverly Hills, Calif., after a long illness. Mr. Barnsdall had been active in the oil business in Oklahoma and Kansas for many years. His wife survives.

GEORGE ELMER GILLIS, former Bradford, Pa., oil man, died last week at his home in Coraopolis, Pa. Mr. Gillis was engaged in the oil business in Bradford from 1880 until 1900, when he moved to Coraopolis, where he resided until 1921. He retired from business in 1938 and returned to Coraopolis. His wife, one daughter and two sons survive.

WILLIAM MULHOLLAND, 45, of South Penn Oil Co., died in Kane, Pa., from a heart attack. He was stricken while arriving at the lease where he worked. He resided at Hazel Hurst, Pa. He leaves his widow and a son.

WALTER B. GUTHRIE, 62, resident of Wichita Falls, Tex., for 25 years, died last week after an extended illness in a Wichita Falls hospital. He was a pioneer oil scout in North Texas and for many years was in the scouting department of Gulf Oil Corp. He leaves his widow and a daughter.

JOHN H. TONEY, 31, district production foreman for Sinclair Prairie Oil Co., Odessa, Tex., died of asphyxiation April 24. His body was found lying on the ground alongside an open-top storage tank where he had gaged the tank.

Decimal System of Quoting Oil Products Advocated

A suggestion from the Petroleum Accountants Society of Oklahoma that a change be made in the method of quoting and publishing prices for petroleum products is being circulated among all marketers in the Mid-Continent district. The accountants propose that quotations be made in cents and tenths (decimals) of cents per gallon or barrel to simplify the work of invoicing and maintaining records.

The practice of using fractions of a cent per gallon in pricing petroleum products developed years ago when minimum changes were usually ⅛ or ¼ cent per gallon. Later, changes were drawn down still finer to 1/16 cent per gallon in the refinery market, although this small division is not common practice.

The decimal system of quoting on petroleum products has been used for several years in the eastern section of the country and, the accountants say, its advantages have been proven in reducing clerical work, computing and typing of invoices, price bulletins and published quotations.

Magnetic Storm

TUCSON, Ariz., Apr. 27.—A moderate storm began April 24 at 1 a.m., and ended April 26, at 5 a.m., central standard time.

THE MARKETS*

CRUDE OIL: Dynamic force of the crude-oil market was again displayed this week and last at the extremes and middle of the country. Pennsylvania purchasers led off with an increase of 10 cents per barrel April 23, California buyers followed April 24 with an advance ranging from 1 to 13 cents per barrel and those in Illinois and Indiana followed up April 28 with a raise of 5 cents.

REFINERY MARKET: Motor-fuel prices were unchanged this week in the major refining districts but they are considered firm and in position to move higher. Shipments are running ahead of production in practically all districts. Tank-car prices in the northeastern states were advanced as much as ¾ cent per gallon in some areas. Buyers report difficulty in locating motor fuel for prompt loading in all interior-refinery centers.

POSTED DEALER AND TANK WAGON. Pacific Coast gasoline prices were given a general advance of ½ cent per gallon simultaneously with higher cost of crude. Advances of 0.3 cent per gallon were made in several New England cities and Pennsylvania prices were increased ½ cent.

FINANCIAL: Oil securities reacted upward to improved marketing conditions and brighter prospects for earnings during remainder of the year. Average of 30 representative stocks for week ended April 26: High, 23.19; low, 22.22; close, 22.81. Week ended April 19: High, 22.95; low, 22.15; close, 22.45.

*Detailed information in Market Section.

International

U. S. S. R. . .

Greater Use of Natural-Gas Reserves Planned

RESERVES of natural gas almost as large as those of the United States are reported by the Moscow Izvestia to exist in the U.S.S.R. Exploration and development of these reserves, however, have been slow and it was not until in the third Five-Year Plan that the government took steps to expand the output. The recovery of gasoline from natural gas is also a part of this program.

Some results have already been achieved. In the Azerbaidzhan fields, the production of gas has increased sharply, and in the second half of 1940, all fields under the petroleum commissariat are said to have exceeded their quotas. Much remains to be done, however, particularly in reducing waste. Plans call for the introduction of closed pipe-line systems in the main oil districts of Baku, Grozny, Maikop, Ishimbai and Buguruslan by the end of 1942. Measures to recover and transport gas will be taken in Kzakhstan, Turkmenia and the Kama field. The first results recorded, from three trusts in the Azneft combine, where tanks and pipe lines for oil were installed, many open reservoirs discarded and gas-lift operations instituted by construction of seven compressor stations, show that the gasoline content of crude petroleum has risen as much as 1 per cent. At the same time, the output of gas has increased by an average of 20 per cent in all trusts included in the combine. This procedure will now be followed by all trusts in the nation. It is now forbidden to complete a new well without making provisions for recovering the natural gas accompanying the operation. It is proposed to build a number of natural-gasoline plants in fulfillment of the general program. Existing plants at Baku and Grozny are not operating at capacity and may be called upon to handle larger volumes of gas pending construction of additional gasoline-recovery units.

Some of the wells in western Ukraine are producing gas for local industrial use, but the supply exceeds present facilities for consumption. A gas line from Dashava to Kiev could be easily and quickly built and would cost only one-quarter as much as a gas plant to use coal from the Donets basin. There are also 11 gas wells at Izhma, in the Komi A. S. S. R., which could readily be tapped to supply the industrial cities in the northern Ural, such as Berezniki, Solikamsk, and Molotov. Near the wells a carbon-black plant could also be erected. And in Daghestan, in the Caucasus, a glass factory and others are already using natural gas; the reserves here are very large and can supply many more consumers.

Mexico . .

Sinclair Handed Fourth Check in Settlement

SINCLAIR interests in New York recently received the fourth check for $1,000,000 from the Mexican Government in payment for expropriated oil properties. Payment of the fourth installment brings the aggregate paid so far to $4,000,000, half the total agreed upon in the settlement between the company and the Mexican Government.

Venezuela . .

Several Rigs Bought To Speed Exploration

VENEZUELA PETROLEUM CO., subsidiary of Consolidated Oil Corp., is proceeding with development of its Meyers-C concession in the State at Monagas where the discovery well was recently completed. The rig which drilled the discovery has been moved approximately 1 mile north of the producer. In addition the company has imported several drilling rigs from the United States. Eight locations have been made and will be drilled as soon as possible. Construction of the 100-mile pipe line to the company's oil-terminal site at Guanta on the Caribbean will be undertaken when justified by development.

Standard Production Climbs

Combined production of the Standard Oil Co. of Venezuela and Lago Petroleum Corp. increased in February to a daily average of 273,984 bbl., a gain of 42,261 bbl. from the January average. Exports also increased though these companies completed but three wells in February against six in January.

A comparison of the daily average production in February and January follows:

	S.O.V.	Lago	Combined
January:			
Lake	7,867	139,056	146,923
Other western fields	1,046	. .	1,046
Eastern Venezuela	76,963	6,791	83,754
Total	85,876	145,847	231,723
February:			
Lake	7,449	174,159	181,608
Other western fields	3,974	.	3,974
Eastern Venezuela	81,873	6,529	88,402
Total	93,296	180,688	273,984

Petroleum Exports Increase

Combined exports of the two companies in February were 7,127,213 bbl., against 6,780,480 bbl. in January, an increase of 346,733 bbl. Standard Oil Co. of Venezuela exported 2,510,264 bbl. in January against 2,870,824 bbl. in February and Lago Petroleum Corp. exported 4,270,216 bbl. in January against 4,256,389 bbl. in February.

A record of well completions in which these companies are interested for the first 2 months of this year follows:

Area—January:	No. wells	Average initial (bbl./day)	Total depth (ft.)
Lake	1	1,134	5,402
Jusepin	1	457	4,620
San Joaquin-El Roble	*2	1,728	10,160
Socororo	1	Dry	4,700
Guaraguara	1	404	7,000
February:			
Lake	1	1,386	5,309
Jusepin	1	711	4,814
Guaraguara	1	Dry	5,993

*1 dry.

Eastern Hemisphere . .

Bahrein Operations Are Stable, Despite Warfare

A REVIEW of 1941 operations of foreign producing companies with which it is affiliated has been issued by the Standard Oil Co. of California. Eastern Hemisphere operations of these affiliates extend from Egypt to New Zealand. Excerpts from the report follow:

Bahrein Island.—Bahrein Petroleum Co., Ltd., in which the company has a 50 per cent interest, continued relatively stable operations throughout the year. Although wartime measures in various countries imposed a number of restrictions, there was no serious interference with the conduct of its business east of Suez.

Arabia.—California Arabian Standard Oil Co., in which the company has a 50 per cent interest, continued the development of its properties in Saudi Arabia. Results obtained from exploratory and development work have proven satisfactory. However, war has caused a shortage of tankers and the closing of many markets otherwise available. This situation has retarded normal development.

Netherlands Indies.—N.V. Nederlansche Pacific Petroleum Maatschappij, in which the company has a 50 per cent interest, continued a program of geological and geophysical exploration. Test wells drilled in Sumatra encountered small but encouraging showings of oil and additional wells will be drilled in 1941. The well in Java proved a disappointment and the entire concession in that area was surrendered. In Netherlands New Guinea drilling was carried on with encouraging results. These activities are conducted by N.V. Nederlandsche Nieuw Guinee Petroleum Maatschappij in which N.V. Nederlansche Pacific Petroleum Maatschappij owns a 20 per cent interest, the company owning indirectly half of this or 10 per cent interest.

India.—A limited amount of geological work was carried on for several months during the year by the Indian Oil Concessions, Ltd., in which the company has a 22½ per cent interest. At the end of the year activities had been suspended.

Egypt.—South Mediterranean Oilfields, Ltd., in which the company has a 50 per cent interest, retained its exploration permits on approximately 6,000,000 acres but activities have been suspended for the duration of the war.

New Zealand.—New Zealand Petroleum Co., Ltd., in which the company has a one-sixth interest, continued geological and drilling activities. Two test wells started during the year were drilling at the end of the year.

The report also stated that the company's wholly owned subsidiary operating in Colombia continued its geological and geophysical program and that during the year an additional 311,051 acres were acquired under contract. Preparations were made for drilling a number of exploratory wells on the company's properties.

A.G.A. Plans Stimulating Program at Dallas

DALLAS, Tex., Apr. 29.—A program designed for producers, pipeline men, and those in all other branches of the natural-gas industry has been arranged for the meeting here May 5-7 of the natural-gas section, American Gas Association.

H. D. Hancock, New York, chairman of the natural-gas section and president of Gas Advisers, Inc., will preside at the first general session. J. French Robinson, president of East Ohio Natural Gas Co., Cleveland, Ohio, and vice chairman of the section, will preside at the second general session May 7.

D. A. Hulcy, Dallas, Tex., president of the Lone Star Gas Co., will deliver the address of welcome.

A symposium on shooting and acidizing gas wells is one of the features arranged for producers. Another production session will deal with well-completion practices cathodic protecting of casing, and deposition of salt in producing formations.

Methods of maintaining high pipe-line flow efficiency and a discussion of pipe-line movement calculations are topics designed for special interest of men in the transportation division.

Golf, luncheons, special women's parties, and the fiesta ball Wednesday night constitute the entertainment program.

Details of the program follow:

WEDNESDAY, MAY 7

9:30 a.m.

General Session, Grand Ballroom, Hotel Adolphus.
Industrial and Commercial Gas-Sales Luncheon, Palm Garden, Hotel Adolphus.

2:30 p.m.

Industrial and Commercial Gas-Sales Conference, Palm Garden, Hotel Adolphus.
Transmission Conference, Roof Garden, Hotel Adolphus.

9:30 p.m.

Fiesta Ball, Hotel Adolphus.

LUNCHEON MEETINGS

NATURAL-GAS SECTION

(Hotel Adolphus—12:30 p.m.)

Tuesday, May 6

Committee of Round Table Luncheons

1. Accident Preventions and Employe Education, Parlors E and F, Hotel Adolphus.
2. Accounting Committee, Parlor A, Hotel Adolphus.

"Increasing Importance of Accounting"—L. E. Dyer, vice chairman accounting section, American Gas Association; Lone Star Gas Co., Dallas, Tex.

(Luncheon meeting followed by an open discussion of such subjects as "Unaccounted-For Gas," "Audits of Gas Purchases and Sales" and "Collection Policies.")

Main Technical and Research Committee.

Home-Service Program—Residential Sales, Palm Room, Hotel Adolphus. Cairman, A.G.A. Home-Service Committee, Albertine Berry, Lone Star Gas Co., Dallas.

Entertainment—Home-Service Chuck Wagon; Music, Cass County Kids; sketches, Mrs. Harris.

Program—"This Program Is Now on the Air." An actual radio presentation, "Modern Homemakers," by Lone Star Gas Co. Cast: Plainsmen Quartet; Home-Service Director, Albertine Berry; Inquiring Housewife, Lois Upshaw.

Wednesday, May 6

(Palm Room)

Industrial and Commercial-Sales Luncheon

Subject: "What Methods Can Be Effectively Used in Cooperating With Your Chamber of Commerce and Similar Organizations?"
Leader: R. G. Soper, president, Dallas Gas Co.
Speaker: Ben Critz, vice president and general manager Dallas Chamber of Commerce.

FIRST GENERAL SESSION

Monday, 10 a.m., May 5

(Grand Ballroom, Hotel Adolphus)

Presiding: H. D. Hancock, chairman, Natural-Gas Section, American Gas Association; president, Gas Advisers, Inc., New York.

Address of Welcome—D. A. Hulcy, president, Lone Star Gas Co., Dallas, Tex.

Fundamental Principles Under the New Rules—Mr. Hancock.

"Deeds First, Then Words"—Thomas J. Strickler, president, American Gas Association; vice president and general manager, Kansas City Gas Co., Kansas City.

"Not Made to Die"—John Temple Graves, II., editor, Birmingham Age-Herald, Birmingham, Ala.

H. D. HANCOCK

SECOND GENERAL SESSION

Wednesday, 9:30 a.m., May 7

(Crystal Ballroom, Baker Hotel)

Presiding: J. French Robinson, vice chairman, Natural-Gas Section, American Gas Association; president, East Ohio Gas Co., Cleveland, Ohio.

Fuel Comments—Alexander Forward, manager director, American Gas Association, New York.

Reports of committees.

"What Have We Accomplished and Where Can We Go?"—W. E. Derwent, president, Association of Gas Appliance and Equipment Manufacturers, New York: vice president, George D. Roper Corp., Rockford, Ill.

"Some Aspects of Health and Safety in the Gas Industry" (tentative)—R. R. Sayers, director, U. S. Bureau of Mines, Washington, D. C.

Subject to be announced—W. H. Carson, dean, University of Oklahoma, Norman, Okla. (Tentative.)

"Recent Court Decisions and Commission Orders Affecting the Natural-Gas Industry"—Roy C. Coffee, vice president and general counsel, Lone Star Gas Co., Dallas, Tex.

TRANSMISSION CONFERENCE

Tuesday, 9:30 a.m., May 6

(Roof Garden, Hotel Adolphus)

Presiding: Julian L. Foster, chairman, Transmission Committee, Natural-Gas Section; general superintendent, Lone Star Gas Co., Dallas, Tex.

"Methods of Maintaining High Pipe-Line Flow Efficiency" (1) Internal cleaning, (2) dust cleaning, (3) dehydration, (4) increased capacity—J. William Ferguson, gas measurement engineer, Canadian River Gas Co., Amarillo, Tex.

"Weather Prophecy"—B. M. Laulhere, technical supervisor, Southern California Gas Co., Los Angeles, Calif.

"Effect of Compressibility Factor on Horsepower Requirements in High Compression (Above 1,000 lb.)"—C. Lambert Moore, assistant to superintendent of compressor stations, El Paso Natural Gas Co., El Paso, Tex.

"Pipe-Line Flow Calculations"—P. McDonald Biddison, consulting engineer, Dallas, Tex.

Discussion—R. A. Ransom, engineer, Panhandle Eastern Pipe Line Co., New York.

"Pipe-Line Flow Calculator"—C. F. DeMey, rate engineer, Ohio Fuel Gas Co., Columbus, Ohio.

2:30 p.m.

Panel discussion: "Modern Compressor-Station Design"

Suction and Discharge Piping—C. S. Kenworthy, Natural Gas Pipe Line Co. of America, Chicago.

Jacket-Water Cooling and Treating—O. H. Moore, Lone Star Gas Co., Dallas, Tex.

Mufflers—H. P. George, Southern California Gas Co., Los Angeles, Calif.

Gas Cleaners—T. H. Kerr, Ohio Fuel Gas Co., Columbus, Ohio.

Lubrication—B. L. Rogers, Lone Star Gas Co., Dallas, Tex.

Electric System to Prevent Electrolysis—Paul F. Marx, Northern Natural Gas Co., Omaha, Neb.

"Our Experience With 24-in. Solid Welded Pipe Lines"—J. T. Innis, engineer, Northern Natural Gas Co., Omaha, Neb.

"Metalizing"—W. J. Garner, general shop foreman, Lone Star Gas Co., Dallas, Tex.

Wednesday, 2:30 p.m., May 7

"Progress in Liquefaction and Regasification of Natural-Gas Process"—John A. Clark, chief engineer, Hope Natural Gas Co., Clarksburg, W. Va.

"Welded Pipe Headers and Their Reinforcement"—Eric R. Seabloom, supervising engineer, research and development laboratories, Crane Co., Chicago.

"Improvements and Use of Pipe-Line Construction Equipment"—S. D. Bechtel, W. A. Bechtel Co., San Francisco, Calif.

Discussion—Lawrence H. Favrot, LaTex Construction Co., Houston, Tex.; Charles S. Foreman, C. S. Foreman Co., Kansas City, Mo., and Tom Jones, T. R. Jones, Inc., Dallas, Tex.

PRODUCTION CONFERENCE

Monday, 2:30 p.m., May 5

(Danish Room, Hotel Adolphus)

Presiding: E. L. Rawlins, chairman, Production Committee, Natural-Gas Section; Union Producing Co., Shreveport, La.

"Specific Volumes and Critical Properties of Separator Gas and Liquid Hydrocarbon Mixtures"—Kenneth Eilerts and R. Vincent Smith, U. S. Bureau of Mines, Bartlesville, Okla.

Symposium on shooting and acidizing of wells:

Experience in Texas and Panhandle and Hugoton fields, Kansas—J. M. Hanley, production engineer, Northern Natural Gas Co., Omaha, Neb.

Experience in Louisiana, particularly Monroe field—T. W. Johnson, Union Producing Co., Shreveport, La.

Experience in eastern states—J. J. Schmidt, field superintendent, East Ohio Gas Co., Cleveland, Ohio, and Coleman Hunter, geologist, Kentucky-West Virgina Gas Co., Ashland, Ky.

Open discussion.

Tuesday, 9:30 a.m., May 6

"Mixing of Gases in Porous Media"—R. L. Huntington, director; Valentine Mertz, natural-gas fellowship student, School of Chemical Engineering, University of Oklahoma, Norman, Okla.

"Deposition of Salt in Producing Formations"—Henry C. Walton, Republic Natural Gas Co., Hugoton, Kans.

Discussion: J. W. Horne, U. S. Bureau of Mines, Bartlesville, Okla., and E. A. Brown, Lone Star Gas Co., Dallas, Tex.

"Completion of Gas Wells Through Producing Pay to Obtain Data for Reserve Estimates and Other Purposes"—J. G. Dickinson, general superintendent of production, Texoma Natural Gas Co., Amarillo, Tex.

Discussion—R. O. Garrett, Arkansas Natural Gas Co., Shreveport, La.; L. T. Potter, Lone Star Gas Co., and Dr. Eugene A. Stephenson, head of the department of petroleum engineering, Lawrence, Kans.

"Cathodic Protection as a Possible Means for Preventing Corrosion of Gas-Well Casing"—W. E. Huddleston, Cities Service Gas Co., Bartlesville, Okla.

Discussion—Starr Thayer, consulting engineer, Houston, Tex.

ACCIDENT-PREVENTION MEETING

Tuesday Morning, May 6

(Parlors E and F, Hotel Adolphus)

Presiding: W. H. Adams, chairman, Accident-Prevention Subcommittee, Natural-Gas Section; safety director, Manufacturers Light & Heat Co., Pittsburgh, Pa.

Panel discussion: "How to Instill and Maintain a Greater Interest in Accident Prevention"—

Chairman: James R. D. Eddy, director, department of vocational education, Austin, Tex.

Executive representative: C. E. Bennett, president, Manufacturers Light & Heat Co., Pittsburgh, Pa.

Foreman representative: Ralph Shipp, chief engineer, Lone Star Gas Co., Petrolia, Tex.

Employe representative: Floyd Callison, Oklahoma Natural Gas Co., Okmulgee, Okla.

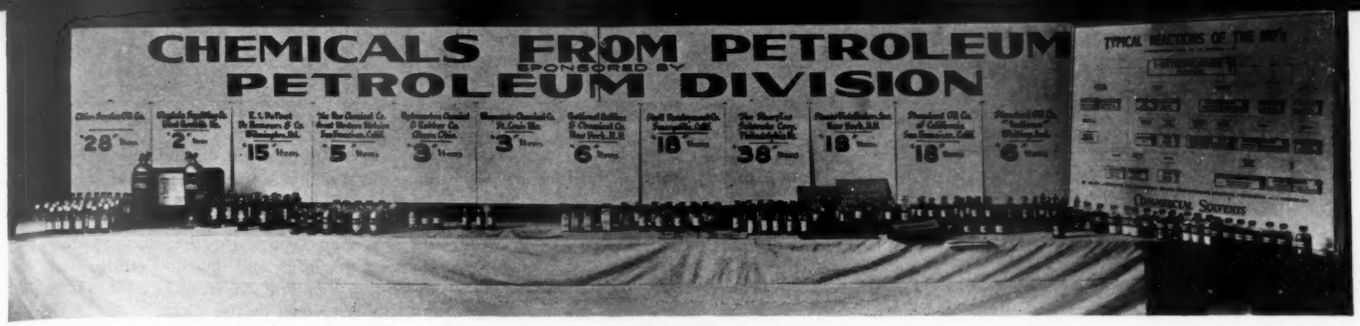
Insurance representative: Hon. J. P. Gibbs, casualty insurance commissioner, Austin, Tex.

"Fires and Causes of Explosions in the Gas Industry and Some Means of Extinguishing and Prevention"—G. M. Kintz, district engineer, U. S. Bureau of Mines, Dallas, Tex.

Tuesday Afternoon, May 6

"The Right Man in the Right Place"—W. R. Davis, assistant personnel manager, Southern California Gas Co., Los Angeles, Calif.

"Protection of Utility Property Against Sabotage"—A. P. Kitchin, special agent, Federal Bureau of Investigation, U. S. Department of Justice, Dallas, Tex.



This display was assembled by the petroleum section of the American Chemical Society and exhibited at its recent meeting in St. Louis, Mo., to show scope of derivatives

Recyling News

Numerous Recycling Plants Are Projected

Recycling plants under way, contemplated and definitely projected for this year along the Gulf Coast of Texas and Louisiana will involve expenditure of approximately $10,000,000.

One of the largest plants, that of La Gloria operating group in Jim Wells County, is nearing completion. It has a capacity of 150,000,000 cu. ft. daily and cost around $2,000,000.

Construction is to start soon on a plant in the East Bernard field, Wharton County, Texas, where H. C. Cockburn has developed gas-distillate production. The plant will be built by O. S. Knisely of New Orleans, La.

Texas Co. is planning a recycling plant in the Blessing field of Matagorda County and Harrison & Abercrombie are considering construction of another plant at Shepherd in San Jacinto County. Harrison & Abercrombie also are planning expansion of their Old Ocean, Brazoria County, plant.

Preliminary consideration is being given to the following prospective recycling operations: M. H. McMurrey of Tyler, Tex., in Lavaca County; Pan American Producing Co. in the Gillock area, Galveston County; Texas Co. at Berwick on the Louisiana Gulf Coast and Stanolind Oil & Gas Co. in South Louisiana.

Texas Recycling Plants Raise Volume of Gas Handled

AUSTIN, Tex.—The Texas Railroad Commission has reported that in February 1941, 1,331,804,000 cu. ft. of gas were processed in recycling and repressuring plants, indicating the constant increase in the activity of this type of plant. This volume was 55,469,000 cu. ft. daily greater than January's volume and 739,547,000 cu. ft. more than was produced in February a year ago. These plants produced 25,367 bbl. of fluid daily, 411 bbl. under January's production but 1,681 bbl. per day above the figure for February a year ago.

The great strides made in this phase of the industry are best indicated by comparison of this month's figures with February 1940. Texas now has 34 plants, 81 injection wells and 264 producing wells connected, compared to 42 injection wells and 90 producing wells connected to these plants a year ago.

Fluid production from gas wells was 1,304 bbl. daily under January. A total of 468 wells were reported compared to 548 last month. A year ago 499 wells produced 11,238 bbl. per day or 1,876 bbl. more than February's production, which was 9,362 bbl. daily.

Two Recycling Plants May Be Built in South Texas

Two South Texas operating projects are in advanced stages, involving construction of two recycling plants in the Francitas field of Jackson County and the Sejita field of Duval County. Erection of the recycling plants will involve drilling programs of 8 to 10 wells for each of the two fields.

H. B. Zachery, Larry O. Cox and others have ordered material for the Francitas field recycling plant, which will be built by the Zachery Construction Co. Distillate wells in the Francitas field involve drilling to sands at depths of 7,450 to 8,650 ft. Unitization of distillate-sand operations is involved in the Francitas field project. Crude-oil operations will remain in the hands of the present producers which include British-American Oil Producing Co., Housh & Thompson and Skelly Oil Co. Other acreage holders in the Francitas field include Texas Co., Sun Oil Co., Gulf Oil Corp., Mills Bennett, Republic Production Co. and Wynn Crosby Drilling Co.

Construction of a recycling plant and expanded operations in the Sejita field, Duval County, depends on success of negotiations for unitization of gas-distillate properties. Champlin & Bass, Inc., Dallas, Tex., operating firm, has taken assignments on gas-distillate rights in part of the field. If negotiations now pending are successfully concluded the Sejita recycling project will involve construction of a plant with 50,000,000 cu. ft. per day capacity and the drilling of several additional wells to sands ranging in depth from 5,350 to 5,660 ft.

Refinery News

Sinclair Is Building New Facilities at East Chicago

Construction of a new barrel house, the cost of which is approximately $250,000, at the East Chicago, Ind., refinery is one of the major items in a construction program of the Sinclair Refining Co. which is now under way.

An addition to the alkylation plant at the company's East Chicago refinery is also in progress and will be completed this year. The cost of the addition is estimated at $80,000.

Another important addition to the company's facilities is the enlargement of the lube plant at the Houston, Tex., refinery, a project that is now practically complete.

Natural Gasoline

Texas Produced 2,045,045 Gal. Of Natural Gasoline in February

AUSTIN, Tex.—Texas natural-gasoline plants this February recovered less gasoline than in the same month of 1940, the Railroad Commission reported last week. A total of 146 gasoline plants took 2,633,386,000 cu. ft. daily, a gain of 5,883,000 cu. ft. per day over January. On the other hand, however, this volume is under last-year runs for the same month by 16,094,000 cu. ft.

Production increased 14,557 gal. daily during the month, total daily average production amounting to 2,045,045 gal., compared to 2,030,488 gal. during January. Last year plants produced 2,104,065 gal. daily or 59,020 gal. more than the same period this year. The rate of recovery during the month was 0.777 gal. per 1,000 cu. ft. of gas.

Butane-propane production increased 15,448 gal. daily over January, or 615,093 gal. per day compared to 599,645 gal. During February 1940 butane-propane produced per day amounted to 469,307 gal., indicating a gain over last year of 145,785 gal. per day.

Natural Gas News

Texas Natural-Gas Production Decreased During February

AUSTIN, Tex.—Moderate weather during February accounted for a decrease in natural-gas production in Texas, the Railroad Commission reported. Total output of all gas amounted to 4,450,044,000 cu. ft. daily. This volume was 261,936,000 cu. ft. under January's daily output; however, compared with February a year ago the volume produced was greater by 121,150,000 cu. ft. daily. Sweet and casing-head gas, totaling 2,443,865,000 and 1,268,276,000 cu. ft. daily, respectively, took the losses in production while sour gas showed some gain, to 718,168,000 cu. ft. daily. This can be accounted for in the decreased volume of sweet gas to pipe lines while gas to carbon plants increased.

Pipe-line runs during the month amounted to 1,648,735,000 cu. ft. daily. This volume was 39,915,000 cu. ft. less than in January but 88,667,000 cu. ft. greater than in February 1940. Plant fuel and lease operations accounted for 582,677,000 cu. ft. daily, gas-lift operations consumed 156,053,000 cu. ft. daily, carbon-black plants took 869,344,000 cu. ft., 240,710,000 cu. ft. were vented to the air, 797,188,000 cu. ft. were utilized in repressuring and 155,326,000 cu. ft were reported as extraction losses.

Carbon-black production again showed a slight increase which began in January after several months of steady decline. Comparison of carbon-black production with last year is indicative of the losses sustained in the industry due to the closing of foreign markets. In February 1940 black production averaged 1,348,164 lb. per day. This year during February 1,318,730 lb. were produced, a daily average of 29,434 lb. less than last year. Compared with January production a slight increase is noticeable, the volume being greater during February by 7,585 lb. per day.

The decline in black production from last year is further indicated in the volume of gas taken by such plants. Last year during February 901,276,000 cu. ft. of gas was consumed daily compared to 869,344,000 cu. ft. during this February. The increase in consumption over January amounted to 2,363,000 cu. ft. per day. The percentage of recovery likewise increased from 1.512 lb. per 1,000 cu. ft. of gas in January to 1.517 in February.

F.P.C. Renews Suggestion For Cut in Hope's Gas Rates

WASHINGTON, D. C.—The Federal Power Commission has renewed its suggestion that a reduction should be made in wholesale rates by Hope Natural Gas Co. A 2-year investigation of the rate structure of the Hope company of West Virginia is now nearing conclusion. The company is opposing complaints against the rates filed by consumers in Akron and Cleveland, Ohio, and by the Pennsylvania Public Utilities Commission.

Geology of Western Nebraska Demands Careful Prospecting

(Continued from Page 11)

reached on these horizons but until that time comes, operators will have to depend upon uniformly interpreted logs or many of their high wells will be found to be low.

The Nebraska Geological Survey, under the direction of Dr. G. E. Condra, is well equipped to meet this situation. Drillers are required by law to submit samples of drilling wells to the survey where they are studied by Dr. E. C. Reed and his staff. The survey gives the operator every assistance and virtually acts as a consultant to him by giving him the results of its correlations. At the same time, this information is kept confidential until such time as the well is completed and the operator has had reasonable time to benefit from the information he has made available.

TABLE 1—LOGS OF UNION 15-1 AGATE, NW SE SE 15-28n-55w, SHOWING FORMATION DEPTHS DETERMINED BY DIFFERENT AUTHORITIES

	Gulf	Survey	Union
Harrison formation	0-1,010	0-70	0-80
Monroe Creek formation		300	
Brule clay		750	880
Chadron formation		960	960
Pierre shale	3,635	3,635	3,660
Niobrara formation	3,865	3,900	3,930
Carlile shale	4,625	4,250	4,275
Greenhorn limestone		4,285	
Graneros shale		4,625	4,935
Dakota sandstone	4,725	4,725	4,995
Fuson shale	4,865	4,915	5,040
Lakota sandstone	4,995	4,965	5,156
Morrison formation	5,165	5,165	5,285
Sundance formation	5,409	5,409	5,409
Spearfish formation	5,785	5,785	5,785
Minnekahta limestone	5,825	5,825	5,825
Opeche-Cimarron formation	6,325	6,325	*5,879
Hartville Div. 1	6,728	6,615	
Hartville Div. 2	6,848	6,846	

*Base Opeche. Remainder may be Minnelusa. (From A.A.P.G. Bulletin, Jan. 1939.)

The survey's determinations will not necessarily prove to be finally adopted as correct, but they will be consistent so that they can be safely used in the preparation of subsurface maps.

Description of Formations

The following discussion of the formations encountered is based upon a study of logs furnished by the Nebraska Geological Survey.

The Quaternary deposits consist of sands and clays and blanket much of the surface. Beneath these is a section of unconsolidated and partly cemented rocks of Tertiary age. These formations are thickest along the northern part of the high and thin to the west over the Agate anticline and, after thinning, gradually die out toward the east where Cretaceous formations form the surface deposits beneath the irregular Quaternary covering. In the Ohio Oil Co.'s test referred to above, and the Hyannis well, the Tertiary deposits total nearly 2,000 ft. in thickness. The uppermost groups are the Ogallala, Hemingford and Arikaree formations, which consist mainly of sands. To the west, the Arikaree rises to the surface as the Ogallala and Hemingford are truncated, while to the south and east the Ogallala overlaps the Hemingford and Arikaree and in the North Platte well lies directly on the Brule and Chadron clays.

Mesozoic Deposits

Cretaceous.—On the Agate structure, the greatest thickness of Cretaceous is found, totaling about 4,000 ft. In Huber 1 Morgan, this thickness is reduced to 2,770 ft., the thinning being due to truncation of the Pierre shales which are reduced from approximately 2,500 to 1,032 ft. In Ohio 1 Demmer, the Cretaceous deposits were entirely cut out, but in the section shown, the greatest truncation was in the Hyannis well where the Niobrara formation, the Carlile shale, Greenhorn limestone and about three-fourths of the Graneros shales are removed.

The most important key bed in the Cretaceous is the Fort Hayes lime, which is the basal member of the Niobrara formation. Elevations on this bed, however, are not of great value except in locating structures within the Cretaceous formations. These produce in Wyoming and in Colorado, where the most important are sands in the Frontier (Greenhorn and upper Graneros), and the Dakota-Lakota series. The Dakota-Lakota series, which includes the Fuson shales, increases in thickness from the northwest into the central part of the area where it is about 600 ft. thick in Grant and Lincoln counties. It thins to some 500 ft. in Phelps and Hitchcock counties and to 400 ft. in Adams County. The Pierre also thins to the east through truncation, being about 350 ft. thick in Phelps County and missing in Adams County.

Jurassic.—In the western and northwestern parts of the district, both the Morrison and Sundance formations are present. Both produce in Wyoming, the Sundance being the more important. In Nebraska, the Morrison is shaly but becomes more sandy to the east where it pinches out just east of the crest of the arch. The Sundance disappears down the west flank of the arch.

Triassic.—The Triassic red beds of the Spearfish formation extend up the west flank of the arch beyond the limit of the Sundance, but are overlapped to the east by the Morrison.

Permian and Pennsylvanian Formations

The Permian and Pennsylvanian formations found on the west flank of the arch are correlated with those in eastern Wyoming. These consist of the Minnekahta limestone, the Opeche formation and the Hartville formation. All are reddish in color and the Opeche and Hartville contain some gypsum and anhydrite. Chances for production of oil from this section are probably very small.

In the Hyannis well, 550 ft. of Permian and Pennsylvanian beds directly overlie the basal sand on top of the granite. These are shales and sandstones of the Cimarron group, dolomitic limestones and shales of the Big Blue series and some 270 ft. of undifferentiated Permian or Pennsylvanian shales and limestones. The shales are largely red with some gypsum in the Permian section. The same conditions exist in the North Platte well so that the Paleozoic section on and to the west of the arch down to the Platte River does not look promising at this time.

In Hitchcock County, the Permian thickens to 1,121 ft. and consists of red, maroon and gray shales with gypsum so that it appears to be unfavorable for the occurrence of oil. Beneath the Permian, however, recognizable correlatives of Kansas pays, such as the Topeka and Lansing-Kansas City, appear and there are numerous sands in the section which may prove productive. In Phelps County, the Permian is about 1,150 ft. thick and the Pennsylvanian about 850 ft. thick. Both contain red beds and gypsum. In Adams County, the normal Kansas section is again present.

Thus, possibilities for Pennsylvanian production appear promising on the southwestern part of the arch near the Kansas State line, but on the east flank it will apparently be necessary to go some 50 miles east of the crest of the arch to get production in this system.

Pre-Pennsylvanian Formations

The Ohio Oil Co.'s well near Rushville found no Mississippian or older Paleozoic beds above the granite and this condition prevails down the crest of the arch at least as far as the Platte River. In the Price Carter well in Hitchcock County, the Arbuckle and possibly a thin section of overlying Simpson has made its appearance. In Phelps County, the basal Pennsylvanian conglomerate rests on over 100 ft. of Simpson beds, which, in turn, cover an Arbuckle section some 200 ft. thick. Between this area and Adams County, 75 ft. of Mississippi lime and 220 ft. of Hunton wedge into the section as well as the Viola.

The basal sand which directly overlies the granite is picked up in practically every well as a true sand, a conglomerate, or granite wash. This sand is productive in Russell County, Kansas, and in the Ray pool in Phillips County.

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Watching Washington

(Continued from Page 17)

the raw materials which go into its equipment, the priorities problem is not wholly the concern of the equipment manufacturers. An oil company placing an order for alloy valves, or aluminum gaskets, or nickel-steel tubing, must be prepared to back up the supplier in showing the actual need for such equipment so that the supplier can get the proper preference rating from the producer of the metal.

Officials of O.P.M. suggest that it would not be out of order for the oil industry, as an industry, to prepare a sort of brief outlining its needs for the various metals subject to priorities and estimating the industry's probable requirements for each. This material would then be on file at O.P.M. and could be used for reference whenever specific priority questions arise. It is emphasized, however, that such a step is only precautionary, since the O.P.M. itself is attempting to administer the priorities system in such a way that the oil industry and other vital industries obtain whatever alloys and other materials are actually needed to maintain production.

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Dozen Companies Cited For Safety Records

Citations were issued last week to 12 oil companies for extraordinary safety achievements during 1940. The citations were issued by the Joseph A. Holmes Safety Association, named in honor of the first director of the Bureau of Mines.

The association is composed of representatives of the leading national organizations in the field of mining, metallurgy and related industries and has for its purpose the promotion of safety in these industries.

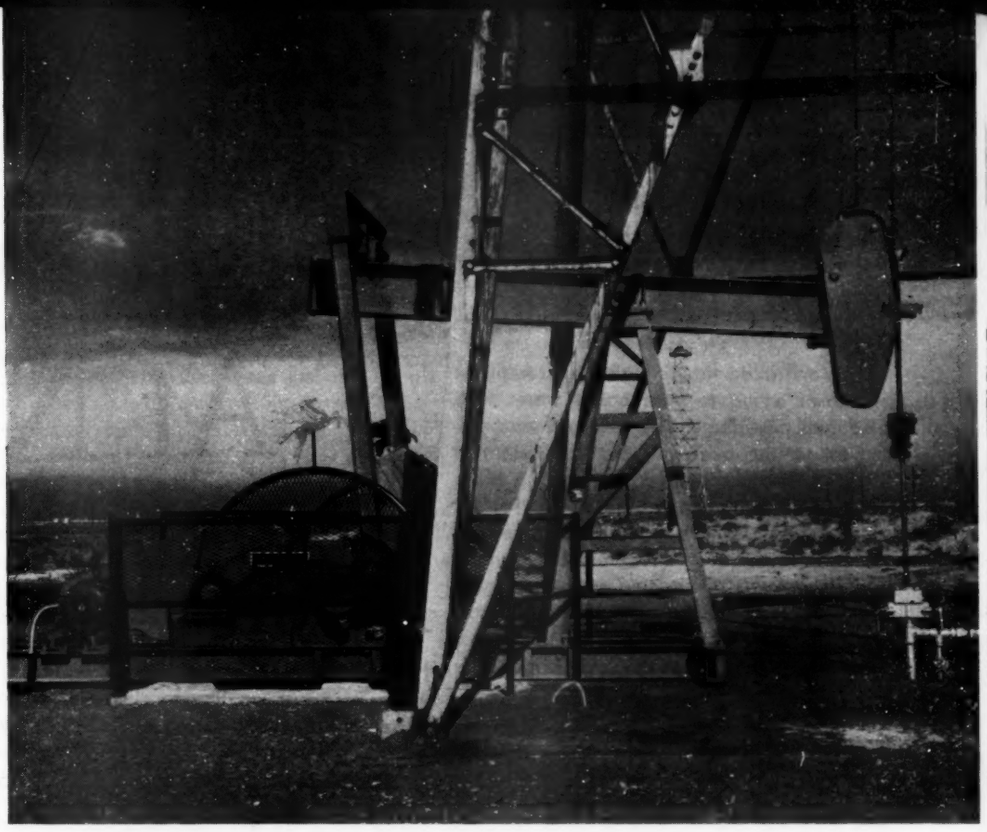
The association meets in the spring of each year and makes awards to individuals and operating organizations for heroism, meritorious acts and for outstanding records and services performed which tend to further and encourage safety in the mineral industries.

The oil companies cited are: Houston Oil Co., Kilgore production and pipe line departments; Indian Refining Co., Lawrenceville, Ill.; Magnolia Pipe Line Co., Dallas, Tex., district; Magnolia Petroleum Co., Fort Worth, Tex., refinery, Panhandle production district and Rusk (East Texas) machine shop.

Shell Oil Co., Inc., Braman and Tonkawa, Okla., plants; Shell Oil Co., Inc., Houston refinery; Standard Oil Co. of Louisiana, Baton Rouge, La., refinery; manufacturing department, Baton Rouge mechanical division and main line pumping station at Melville, La., and Texas Pacific Coal & Oil Co., Fort Worth, Tex.

President, Independent Prospecting Co.

In an article on Page 40, April 3, 1941, issue of The Oil and Gas Journal, some paragraphs were quoted from a letter by Joseph L. Adler, who was erroneously identified as president of Independent Exploration Co. Mr. Adler is president of Independent Prospecting Co. T. I. Harkins is president of the former company, and has held that position for the past 4 years.



Desire to prevent accidents to their field personnel, visitors or animals, has led oil companies to install guards of some type around pumping units and other moving equipment, especially where the fields are located near towns and highways. At this electric-motor driven, twin-crank unit in the Kermit field of West Texas, the usual type guard has been improved upon by use of heavy screen placed over the steel pipe framework

ENGINEERING & OPERATION

In This Section

MAY 1, 1941

PRIZE-WINNING OPERATING KINKS AT N.G.A.A. MEETING ..... Page 26

GAS MEASUREMENT BALANCE IN A GAS-CYCLING PLANT
By D. A. Sillers ..... Page 29
At its cycling plant in the Opelika field of eastern Texas, Lone Star Gas Co. has made a close study of measurements and as a result is obtaining measurements which are believed to be well within the limits of accuracy to be expected at low pressure. Here these methods are described.

OIL RECOVERY BY AIR AND GAS DRIVE IN PENNSYLVANIA
By Robert B. Bossler and Parke A. Dickey ..... Page 32
Introduction of air or gas into oil sands of Pennsylvania fields has resulted in materially increasing recovery of oil except in a few cases. The authors discuss the effect of well spacing on ultimate oil recovery and describe various gas and air drives outside the Venango district.

AUTOMATIC CONTROLS CLOSE WELLS WHEN TANK BATTERY IS FILLED
By D. H. Stormont ..... Page 35
On the Cowden lease of Phillips Petroleum Co. and Pure Oil Co. in the Goldsmith field of West Texas, automatic controls have been installed on a 2-well tank battery to close the wells when the tanks are filled. This greatly reduces switchers' labor and cuts car mileage almost in half.

CEMENT SPRAY BAILER USED TO COMBAT CAVING SHALE
By A. C. MacIntyre ..... Page 36
In the Appalachian fields one of the most troublesome problems in deep wells is the handling of caving shales. Use of cement spray bailer to place a thin coat of cement on the face of the shales has proven quite successful as an aid in preventing caves.

HEAVY-DUTY LUBRICATING OILS AS MEASURED BY ENGINE TESTS
By H. C. Mougey ..... Page 38
Many standard tests can be made in the laboratory for determining the properties of an oil, but most of them are of little value in predicting the oil's performance under heavy-duty service conditions. The several tests in use are described and the need for better service tests pointed out.

METALS IN REFINING—By W. L. Nelson ..... Page 39

Prize Winning At N. G. A. A.

ORIGINALLY begun as an experiment o stimulate discussion of problems by operating men, the "operating kinks" session of the Natural Gasoline Association of America has become one of the principal attractions at its annual meetings. The entire program of the last day was given over to discussing the various entries at this year's N.G.A.A. meeting, held in Dallas, Tex., April 23-25. Prizes were awarded by the association according to classification for different phases of plant operation. A number of the prize-winning kinks are presented here, and in early issues of The Oil and Gas Journal additional ones will apear.

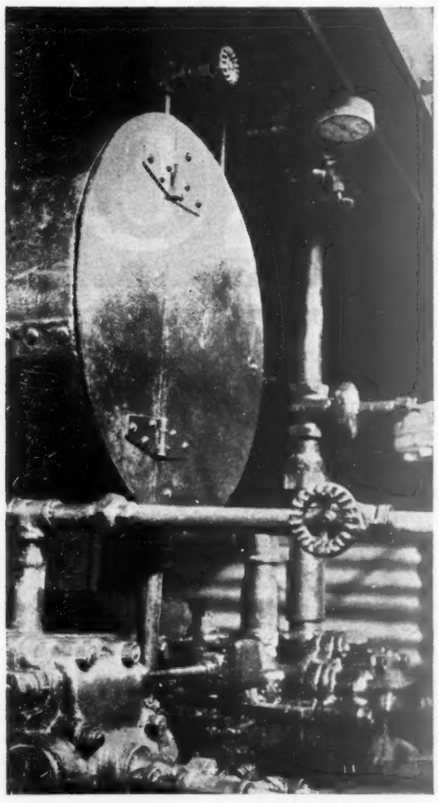
Boiler Feed-Water Treating Pump

GRAND PRIZE

CLARENCE LESHER, *Plant Superintendent*
Skelly Oil Co., Fairfax, Okla.

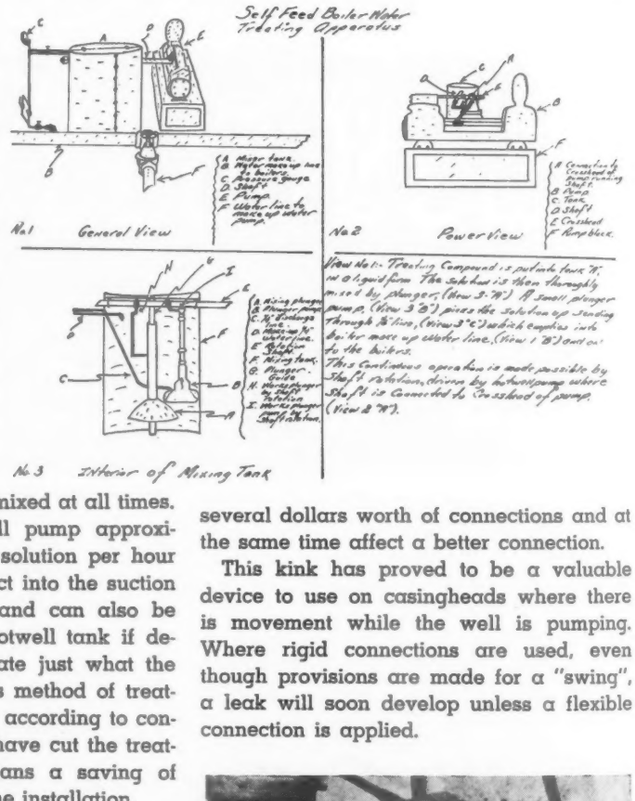
This operation was thought up through the efforts of trying to treat boiler water with disodium phosphate. The problem was, trying to get the treament into the boilers at an even flow and to feed constantly a given amount of treatment to the boilers at all times, which is necessary to obtain the best results and the most economical treatment. This treater was constructed by using a tank, size 20 by 36 in., cut from an old Bessemer air tank which had become unsafe to use for an air tank. The pump is an old Cooper type 75 crank-case oil pump, which is a hydraulic pump. The plunger is ⅝-in. diameter and has a 2-in. stroke.

This pump was placed inside the tank at the bottom and fastened to the tank. A shaft was installed, long enough to reach through the tank and extend through one side approximately 6 in. This was made from an old polished rod. To this shaft the pump in the tank is connected and the shaft is connected to the valve gear on the boiler feed pump.



A rod is placed in the center of the tank, as the sketch shows, in a vertical position. This is a ¾-in. rod.

An apparatus was constructed to prevent the solution from settling out and to keep it mixed at all times. This was done by making a funnel-shaped mixer. The funnel being made out of an old barrel head. The large end of the funnel is 10 in. in diameter and the small end is welded to a piece of ¾-in. pipe, which is slipped over the ¾-in. vertical rod in center of tank and fastened to the shaft that operates the plunger pump, so when the pump is operated the treating solution is constantly being mixed. This funnel is adjusted so that on the downward stroke it will stop about 1 in. from the bottom of tank, keeping the solution well mixed at all times.



The plunger pump will pump approximately 4 gal. of treating solution per hour and we are pumping direct into the suction of the boiler-feed pump and can also be pumped into the boiler hotwell tank if desired. It is hard to estimate just what the saving would be with this method of treating. The costs would vary according to conditions. At this plant, we have cut the treating cost half, which means a saving of $181.48 per year on the one installation.

Flexible Casing-Head Connection

FOURTH PRIZE CLASS D

JESSE T. BROWNING, *Plant Superintendent*
Skelly Oil Co., Wynona, Okla.

Almost all gasoline plants have some discarded 2-in. gasoline-loading hose, a part of which can be used to make this device. A good section, of proper length is selected and then the 2-in. male and female connections are reinstalled. The cost of installation is negligible and oftentimes one can salvage several dollars worth of connections and at the same time affect a better connection.

This kink has proved to be a valuable device to use on casingheads where there is movement while the well is pumping. Where rigid connections are used, even though provisions are made for a "swing", a leak will soon develop unless a flexible connection is applied.

Operating Kinks Meeting

Absorber Level-Control System

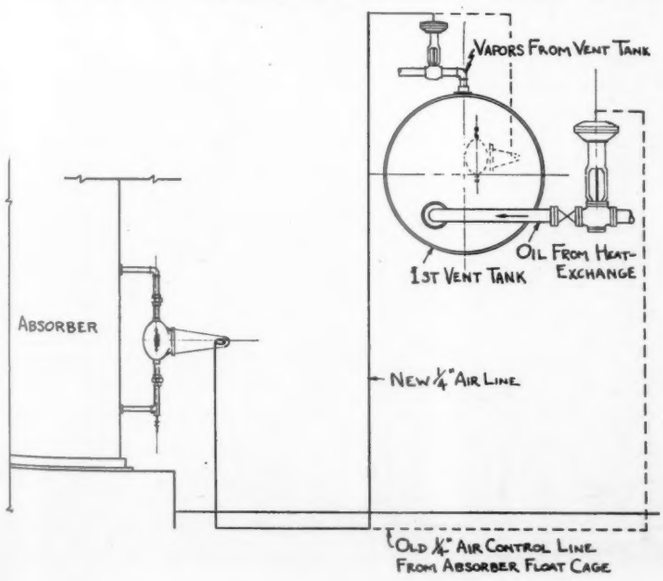
FIRST PRIZE, CLASS C

D. W. HUNSAKER, *Chief Operator*
Phillips Petroleum Co., Crane, Tex.

As ordinarily hooked up, the float cage on the absorber controls the oil level in the absorber by operating a motor valve on the rich oil from the absorber either at the absorber or on the rich-oil pump discharge. In order for the oil valve to operate there must be a reduction in pressure. This reduction in pressure either causes a loss in butanes in the primary vent-tank vapors or an increased load on the rich-oil pump.

This kink proposes the elimination of the oil-stream control valve by using the absorber float to regulate the vapors popped from the primary vent tank. The actuating air line would be connected from the absorber float to the vent-tank vapor valve in such a way that a high oil level in the absorber would cause the vent-tank vapor valve to open and conversely, a low absorber level would cause the vent-tank vapor valve to close. When the vent-tank vapor valve opens the pressure on the vent tank is decreased and more oil is allowed to flow from the absorber, thereby lowering the absorber level. When the vent-tank vapor valve closes the vent-tank pressure is increased and flow from the absorber is restricted, raising the oil level in the absorber.

With this system of control, the maximum pressure is carried on the primary vent tank at all times. This decreases the amount of butanes and pentanes vented from the primary vent tank and increases the production of these fractions. A saving in turbine horsepower is effected as pressure drop through the oil-control valve is eliminated.

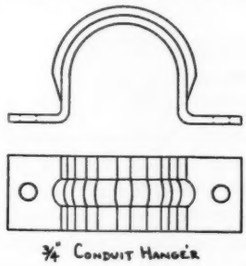

VAPORS FROM VENT TANK
OIL FROM HEAT-EXCHANGE
1ST VENT TANK
ABSORBER
NEW ¼" AIR LINE
OLD ¼" AIR CONTROL LINE FROM ABSORBER FLOAT CAGE

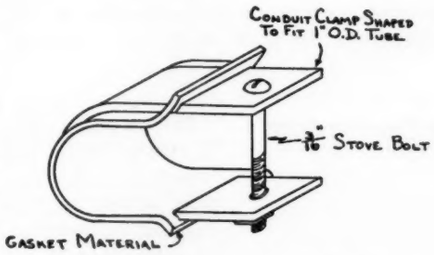
Repair of Brass Tubes

THIRD PRIZE CLASS C

OTIS G. THOMPSON, *Chief Operator*
Phillips Petroleum Co., Oil Center, N. M.

A ¾-in. galvanized conduit strap, hammered to the contour of a ¾-in. pipe nipple is used as a clamp, together with preferably





a rubber or suitable gasket. This clamped over the coil leak with a 3/16 by 1½-in. standard stove bolt, through holes in clamp and is tightened with a screwdriver as the stove bolt has a slot head. After leak is shut off in above-described manner the G.R. sections can be used until some final repair is made to them. This has proved satisfactory on vapor, gasoline, and oil coils, with pressures up to 150 lb.

It is a quick method of repair and can be made on small leaks on any tube in the section without shutting coils out of service. Three to 5 minutes is the usual time for installation. For instance, say you have a leaky tube in either gasoline, gas, or oil coils, this quick repair method can be used, saving on oil, gasoline or gas is effected, no loss of production is encountered as section is kept in service. This enables permanent repair to be made either when plant is down for some reason or gas volume to plant is low or favorable weather conditions for cooling-tower work is to be had.

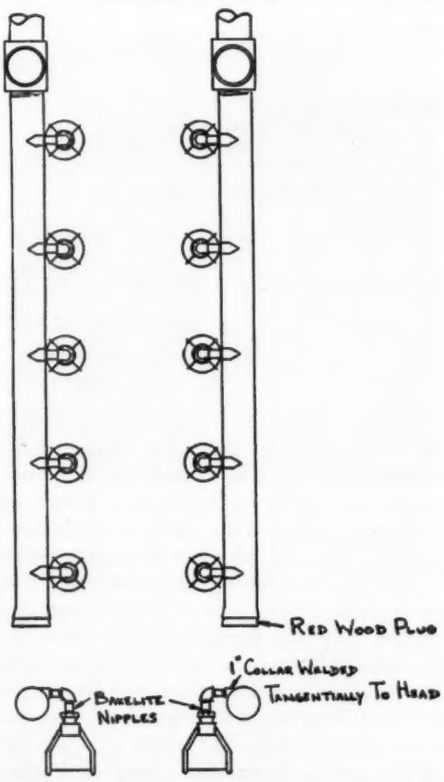
The writer believes this to be the best and most economical method of temporary repair to the previously mentioned type of coil.

Improved Cooling-Tower Spray Arrangement

SECOND PRIZE CLASS C

C. O. MEYERS, *Manufacturing Engineer*
Phillips Petroleum Co., Odessa, Tex.

To obtain satisfactory results from sulfuric acid treatment of coil-pit cooling water, it is absolutely essential that proper water distribution be maintained over the coils. The principal difficulty with the system now commonly used is the tendency of the sprays to become stopped with pieces of scale which form on the tower and become dislodged and fall into the troughs. The scale is then washed into the spray headers and collects in the bottom of the headers.



If the water is taken from the top of the headers instead of the bottom, the scale will settle out in the bottom of the headers where it can be periodically flushed out by pulling the wooden plugs on the header ends. The ¾-in and 1-in. spray connections are welded

tangentially to the top of the distribution headers. The header ends are stopped with wooden plugs which can be easily removed by tapping with a hammer when the header is to be flushed. This was done to eliminate pipe-thread corrosion usually prevalent where pipe caps are used. The header ends are slightly flared with a boiler-tube roller to make the plugs fit better. These plugs were turned on a lathe from redwood.

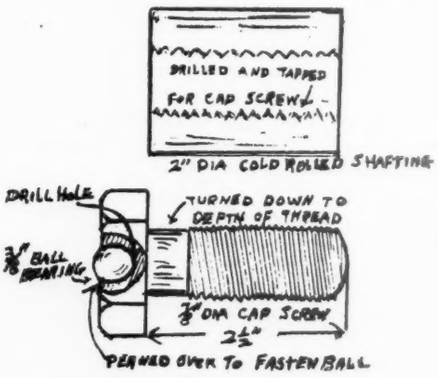
Small Screw Jack

THIRD PRIZE CLASS D

G. I. HARKRADER, *Chief Repairman*
Skelly Oil Co., Lyman, Okla.

This jack is especially adaptable to use where space is limited and can be used especially in engine repair work, for example, the raising of engine crossheads when realigning pistons or wherever a very small jack of great power and small adjustment of lift is required.

This jack is very simple and can be easily made from parts readily available at very little cost. It is constructed from a piece of cold rolled steel or shafting about 2 in. in length, drilled through the center and tapped for a ⅞-in. U. S. Standard screw. A ⅞-in. hexagonal head cap screw is turned down to slightly less than the diameter of the bottom of the thread from end of thread to bolt head. The top of the head is drilled in the center to accommodate a ⅜-in. steel ball bearing. The rim of the hole is peaned or center-punched so that the ball bearing is trapped but still free to roll. This ball relieves the friction between jack and load so that jack will always remain where desired. This jack will lift as much as a 2½-ton load, yet it is simply and economically made.

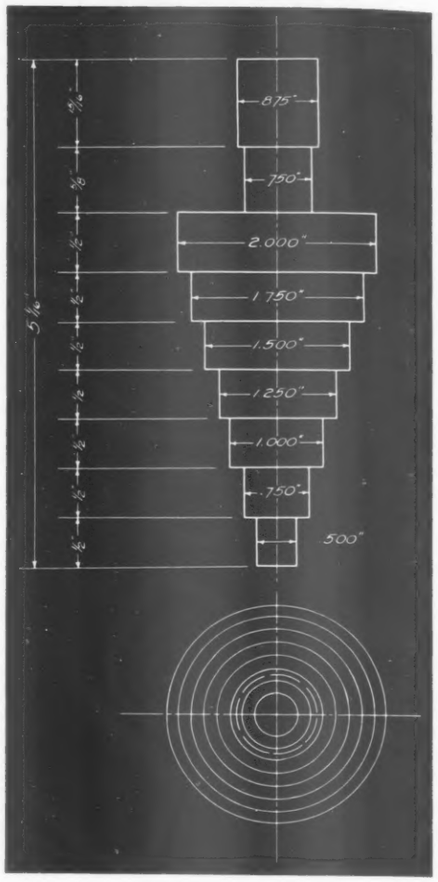


Plug Gage for Orifice Meter Plates

FIRST PRIZE CLASS B

AL TROMLEY, *Meter Man*
Warren Petroleum Corp., McPherson, Kans.

This gage was made to fill the need for a quick and accurate method of gaging the bore of an orifice plate while in the field. Its simplicity of operation and construction make it ideal for its purpose. The gage will detect a bore that is out of round, tapered, oversized or undersized, regardless of the thickness of the plate. Made to a tolerance of one-ten-thousandth of an inch of cold rolled steel, this original gage cost $3.50.



Pressure Trap for Moving Oil From Separators

SECOND PRIZE, CLASS B

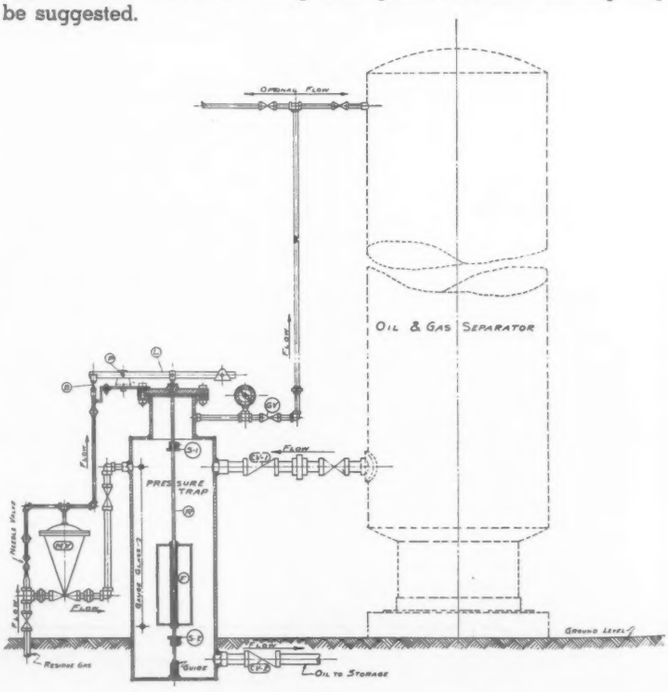
R. C. MASON, *Plant Superintendent*
Phillips Petroleum Co., Bivins, Tex.

The trap was made from a piece of 16-in. pipe 4 ft. long with flat heads welded in for operating pressure up to 40-lb. gage. An 8-i·· nozzle made from 8-in. nipple and flange are welded in one end or top covered by 8-in. blind flange. Before welding the assembly a guide was welded in the center of the bottom head for a float guide made of ¼-in. pipe. A float to operate on the rod made from light weight 7-in. diameter by 16-in. long pipe with flat heads welded in and a piece of ¾-in. pipe welded through center to operate on rod.

Other materials required are: A piece of ¼-in. by 1¼-in. strap iron about 2 ft. long. A few pieces of scrap steel. A rubber stopper. A zerk connection for orifice bleeder A packing gland probably salvaged from some old piece of equipment. A ¾-in. normally closed motor valve and various pipe connections and nipples.

After trap is assembled, operation begins with no pressure on trap. Oil flows by gravity from separator to trap. As the trap fills with oil, float *F* rises with liquid level until contacting stop *S-1*. Float rod *R* is lifted rotating level *L* about pivot *P* closing orifice bleeder *B* thereby building up pressure on diaphragm of normally closed motor valve *MV*. The motor valve *MV* opens admitting residue-gas pressure into trap. As pressure is admitted to trap check valve *DV-1* closes and oil is forced out of trap to storage through check valve *CV-2*. When trap is emptied, float F drops on stop *S-2* opening bleeder *B* closing motor valve *MV*. Pressure is released from trap through pinched globe valve *GV* either to separator or to air. Check valve *DV-2* closes and the operation is repeated.

The purpose of this trap is to move the oil from gas-oil separators to storage tanks when pressure on separator is less than the differential head between separator and storage. Installation of the traps saved the expense of elevating separator. This is only one application, however, as many other possibilities for this trap may be suggested.

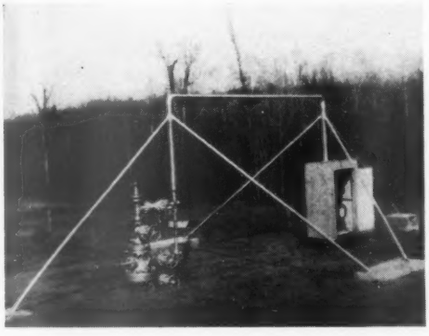


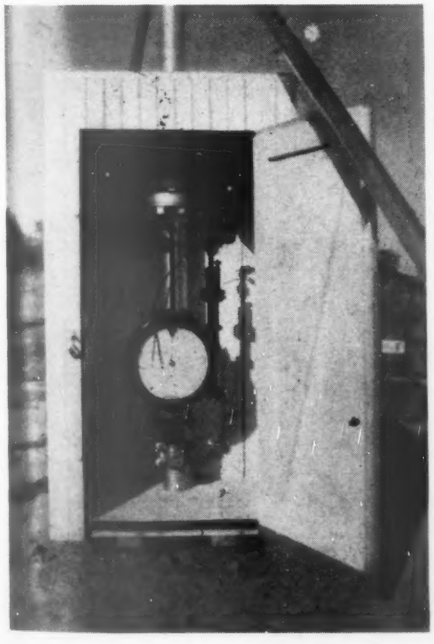
Gas Measurement Balance In a Gas-Cycling Plant

By D. A. SILLERS
Lone Star Gas Co., Dallas, Tex.

***N.G.A.A.*—Paper presented before annual meeting of the Natural Gasoline Association of America at Dallas, Tex., April 23-25, 1941.**

FORTUNATELY for the gas-measurement department, the Lone Star Gasoline Co. built their cycling plant after a number of other companies had had several years' experience with the special problems surrounding extremely high-pressure gas measurement. We are indebted to the Humble Oil & Refining Co., the Tide Water-Seaboard Oil Co., Coastal Recycling Corp. and many others for valuable information and suggestions, which we have used to advantage at our plant. We have made a close study of measurement as a separate problem and as a result are obtaining measurement at extremely high pressure which we believe is well within the limits of accuracy that may be expected at low pressure. During our first full month's operation the measurement from our seven production wells checked the measurement at the absorber outlet with 2.3 per cent loss, after making proper allowance for the measured fuel and vented vapors and the calculated shrinkage. During the same month our measurement at the injection well checked 3.8 per cent higher than the absorber-outlet measurement, this difference probably being due to pulsating flow.





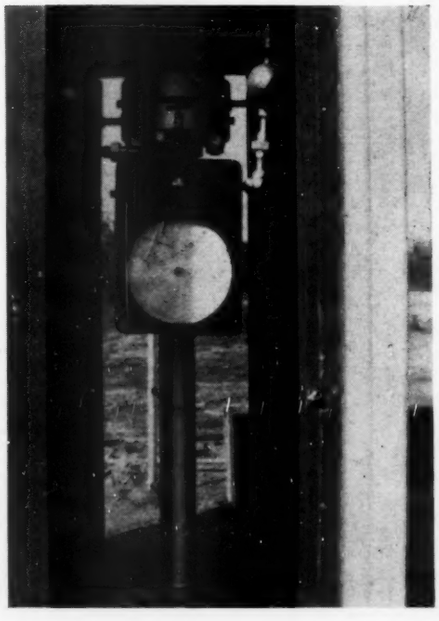


Fig. 1 (left)—Well-head hookup and flow line on a condensate well in the Opelika field of Eastern Texas. Fig. 2 (left, below) and Fig. 3 (below)—Houses used by Lone Star Gas Co. to keep the meter run, meter and piping on its condensate wells from freezing

Field Problems

In this paper I will describe the methods that we have found to be effective with the understanding that other methods may be equally effective or more so. In the first place, a capable meter inspector who is qualified to properly install, adjust and maintain the meters is indispensable. Starting with the production-well christmas tree, we use a riser swedged to 4 in. with an ell in which is installed a sampling tube. We then install about 15 ft. of horizontal pipe to take care of expansion in the well, which causes the christmas tree to rise from 2 to 3 in. when maximum flowing temperature is reached (Fig. 1). We then ell down through a straightening vane and vertical meter run with the orifice flange slightly below the center of this run and a thermometer well located near the bottom. Recessed orifice plates are used to prevent blowing out of gaskets. Specially designed flange spreaders are used.

From the flange taps we use liquid seal pots of 4-in. pipe about 8 in. long. The high-side seal pot is 2 in. above the low-side seal pot and it is not necessary that they be on the same level. One-half-inch extra-heavy pipe with bolted unions and Metric needle valves are used in the meter piping except that the bypass is built of ¼-in. and located above the seal pots. Threads are carefully cleaned with alcohol and Copalite is used for pipe dope. The meter piping and meter are grouped as closely as possible around the meter run.

Hydrate freezing of the gas in the meter piping is a serious problem. We enclose the meter run, meter and piping in the smallest house possible and the heat of the meter keeps the meter and piping warm enough to prevent freezing (Figs. 2 and 3). The back and front sections of these houses are full opening doors allowing access to the meter. It is imperative that the meter piping and the pressuretight bearing in the meter are absolutely free of leaks to keep the meter from freezing.

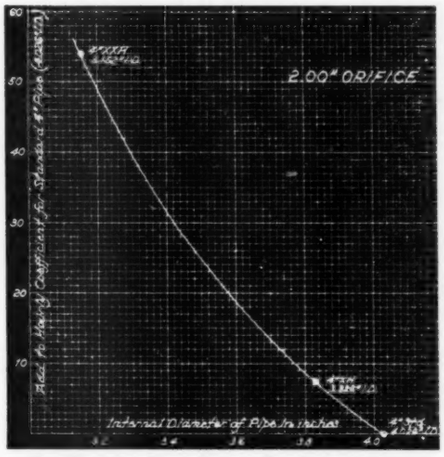


Fig. 4—Chart illustrating how the coefficient for a particular orifice may be determined for special pipe, external diameter of which does not conform to either XH or XXH pipe

Plant meters such as used on the absorber outlets, etc., are often installed on meter runs with too small an inside diameter, and as a result orifice plates are used which have a d/D ratio which is too large for accurate results. It should be remembered that extra heavy pipe has a small inside diameter and in many cases it would be better to swedge to the next larger size pipe for the meter run. Such orifice plates are often designed for a d/D ratio of 0.75, which is too large to start with, and then when the volume through the plant is increased by 30 or

40 per cent no real measurement can be obtained.

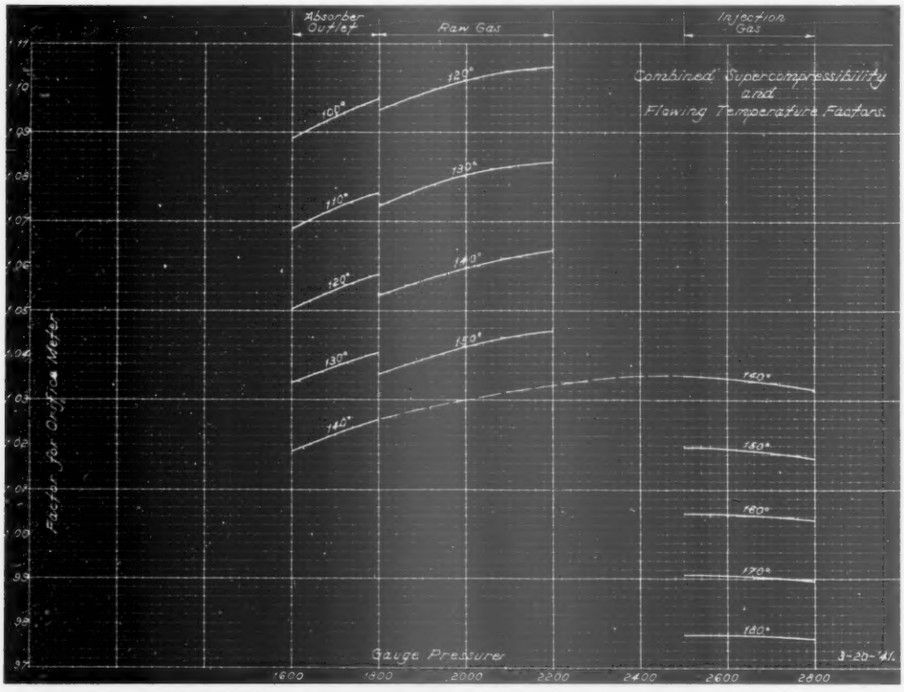
Meters with a 200-in. differential range are being used to help overcome this difficulty. Plant meters that are subject to hydrate freezing should be tightly housed and heated with steam. Liquid condensate pots on the meter piping are used to collect condensate and also form a receptacle to catch mercury which might be blown from the meter. Large scrubbers between the plant meters and the compressors usually form an effective pulsation remover.

Other meters in the plant which are used in obtaining the plant balance may include those for boilers and miscellaneous fuel, vapors vented from fuel scrubber and vapors vented from stabilizer. Orifice meters are also installed on various liquid and steam lines throughout the plant to give operating information. Many plant meters must be installed on individual mountings to eliminate mechanical vibration and these are connected to the orifice flange by means of flexible steel tubing with flared fittings.

Meters installed on the residue gas to the input wells present very special problems due to pulsating flow. They should be installed on individual mountings and connected to the flange with flexible steel tubing. On our initial installation our meter showed a small differential when the plant first started and this differential went below zero as the volume increased. We increased the length of the downstream meter run, replaced one 3-in. check valve with two 4-in. check valves, the latter branching off from the meter run at right angles into expansion bends to the input well, and these changes resulted in the meter operating at from 3 to 4 per cent fast as compared with our absorber-outlet meters.

Several months later we put into service a second input well, which had been built similar to our initial design on the first input well. This meter also showed a reverse flow until we found a size orifice plate which gave a differential on the chart, but the recorded differential seems to have no connection with the amount of gas injected into the well. It has not been practical to shut down and change this installation and we arrive at the measurement of this input well by calculation, using the absorber-outlet meters and the first input-well meter.

Measurement of pulsating flow is evidently influenced by actual alternations in the direction of the flow of the gas with results similar to echo effects in sound waves, and each installation presents a separate problem. Where one input well is used, the practical thing to do is to use the absorber or plant suction meters. Where more than one input well is used, the stations should be carefully designed exactly alike and possibly comparable results may be obtained by checking with the plant meters. Input-well meters should be located near the input wells as the results are of no value when they are installed near the discharge of the compressors due to the violence of the pulsations.



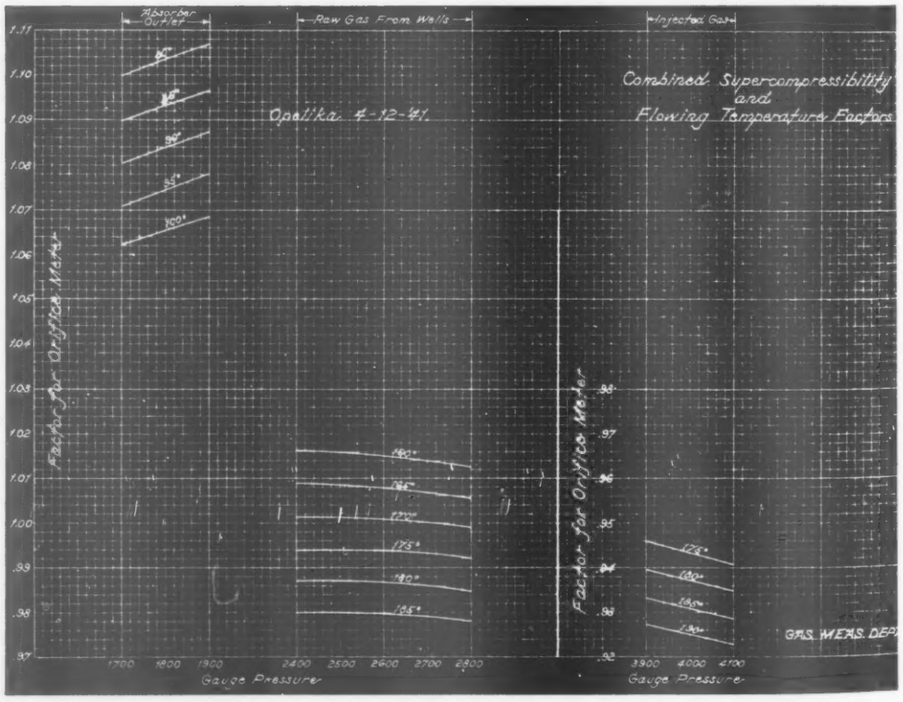


Fig. 5 (above)—Typical worksheet for raw gas for determining the absolute pseudocritical temperature and pressure. Fig. 6 (right)—Typical worksheet using the data obtained in Fig. 5 to derive Z value, the supercompressibility and temperature factor for a gas well

Office Problems

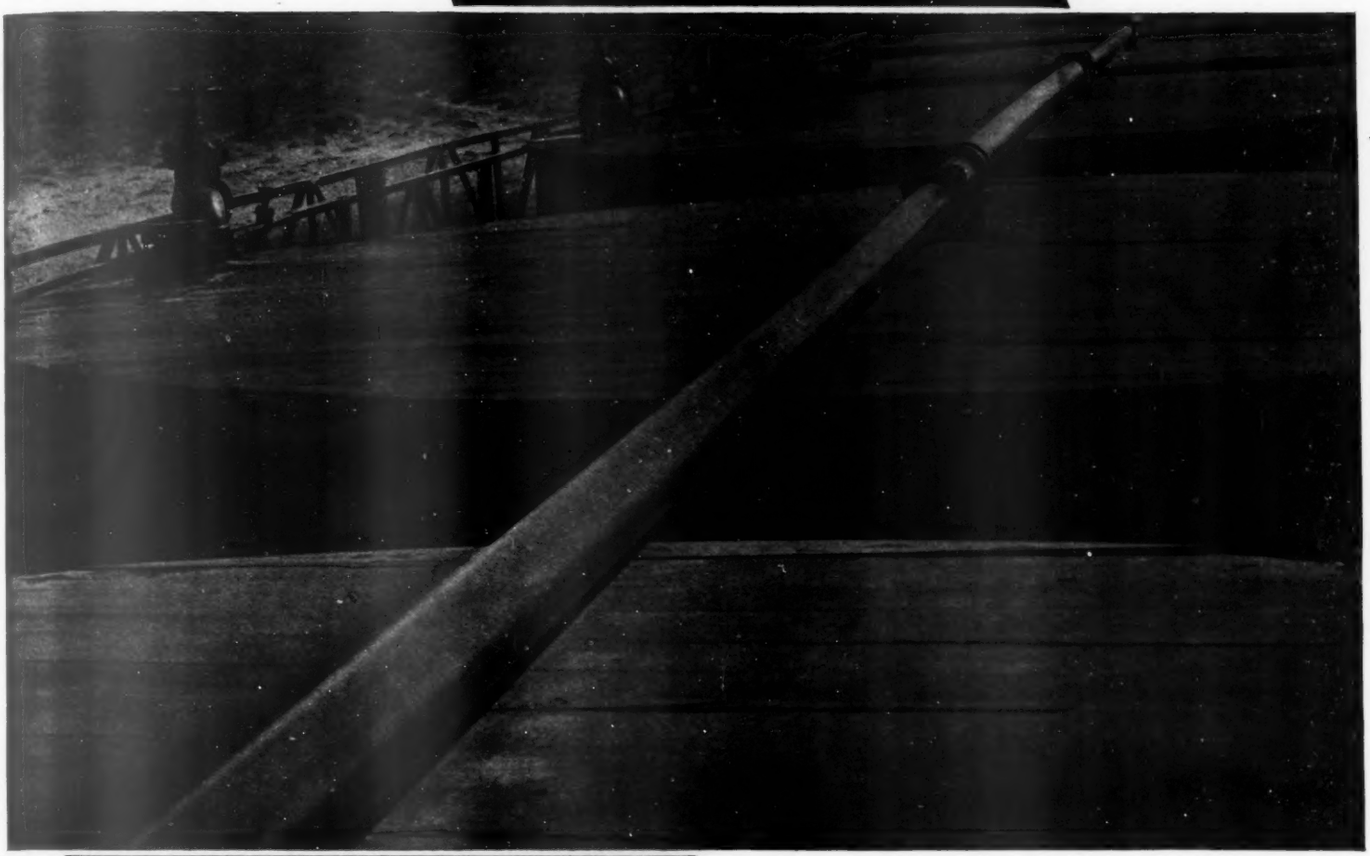
The special engineering problems in the office have now been reduced to rather simple form. We use coefficients from the A.G.A. Report 2 inasmuch as the expansion factors and Reynolds number factors are so insignificant that they may be dropped. Special coefficients must be used for the small internal diameter of extra heavy and double extra heavy pipe.

For special pipe whose internal diameter does not conform to either XH or XXH pipe, the coefficient for an particular orifice may be determined as follows: Plot the coefficient for that size orifice for standard pipe, XH pipe and XXH pipe, using the internal diameter of the pipe on the horizontal scale and the difference between the coefficients for the heavy pipes and the coefficient for standard pipe on the vertical scale. Draw a smooth curve between these three points and find the point at which the curve intercepts the actual internal diameter of the odd pipe. On the vertical scale you may then read the figure to add to the coefficient of standard pipe to obtain the desired coefficient (Fig. 4).

The coefficient should be multiplied by a seal pot factor of 97. This factor is based on the assumption that the water in the seal pot will have 0.8 its usual specific gravity due to gas in solution. This is purely an assumption and we would appreciate any more accurate information as to the effect of the gas in solution in the water at high pressure.

It is now general practice to obtain an analysis of the residue gas and then compute the analysis of the virgin gas from plant-balance figures. Given the analysis of these two gases, it is a simple procedure to obtain the supercompressibility factors for the production-well gas, the absorber-outlet or separated gas and the input residue gas. These should be plotted only for the pressure and temperature ranges covered by the respective meters. They should then be combined with the temperature factor so that combined supercom-

Cast Iron Pipe used in sour oil country in the Southwest



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pressibility and temperature factors are available.

In applying Dr. Brown's formula, Fig. 5 shows a typical work sheet for raw gas for determining the absolute pseudocritical temperature and pressure. Fig. 6 shows a typical work sheet using the data obtained in Fig. 5 to obtain the Z value, the supercompressibility factor and the combined supercompressibility and temperature factor for the well gas at 120° F. through a pressure range of from 1,800 lb. gage to 2,200 lb. The calculations in Fig. 6 must be repeated for other temperatures within the temperature range, also for the absorber-outlet meters and the input meter for their respective pressure and temperature ranges. We use an enlargement of Dr. Brown's curves for obtaining the Z value from the pseudoreduced temperature and pressure. We also use the analysis of the gas to obtain the specific gravity.

It is often desirable to obtain the specific gravity of extremely high-pressure gas when analysis of the gas is not available. The gas can be reduced to atmospheric pressure and a gravity-balance test taken. This will not be accurate as it is impossible to obtain a true sample and there will be a certain amount of condensate which will not be in a gaseous form in the balance. Under such conditions we would suggest that 2 per cent be added to the observed specific gravity and the result will be as accurate as can be obtained under the existing conditions and for all practical purposes.

It is hoped that these remarks will be of some value in handling the problems of high-pressure gas measurement. By following these recommendations, we are now able to check our production-well meters against the absorber-outlet fuel and vapor meters and calculated shrinkage to within less than 1 per cent and for last month we checked within 0.2 of 1 per cent. We feel that the basic value of such accurate measurement lies in the fact that in future months or years when pressure and temperature conditions may change we will still have accurate measurement which is comparable to our present measurement when used to make comparisons of plant yield and the gasoline or distillate recovery from individual wells under study.

Oil Recovery by Air and Gas Drive in Pennsylvania

By ROBERT B. BOSSLER and PARKE A. DICKEY
Brundred Oil Corp., Oil City, Pa. Pennsylvania Topographic and Geologic Survey

OPERATION of a lease having 17 air wells and 41 oil wells on 67.2 acres is discussed in the first part of this paper. The property was developed on a 7-spot pattern. The production curve of the original pattern was a logarithmic decline but the unit pattern was considered to be only 50 per cent effective. Surrounding some of the oil wells in the patterns resulted in a production increase of 500 to 700 per cent. Results indicate that a pattern development was more effective than an irregular arrangement of wells.

About 9 months elapsed between the average time of a development and the peak of oil production. About 78,600 bbl. have been recovered from the property to the end of 1940, indicating an average recovery of 1,170 bbl. per acre. Expected ultimate recovery is placed at 2,000 bbl. per acre.

It is interesting to speculate on the results had this tract been developed entirely in 1 year. Under the arrangement used, it will take 21 years to reach the economic limit but if all of the development had taken place in 1 year, it would have required only 12 or 15 years. Present value would have been enhanced and from 6 to 9 years of operating costs would have been saved; a larger capital investment would have been required.

A second property used a modified 7-spot program in which the new wells were located to fit in with old wells to make a fairly symmetrical pattern. Oil wells are spaced on about 1.2 acres and air wells on 3.9 acres. A recovery of 315,900 bbl. was recovered from 190 acres from 1932 to 1940, a recovery of 1,660 bbl. per acre. The decline curve for the lease shows no lag between drilling and production because the input wells were drilled in advance of the oil producing wells.

Effect of Well Spacing on Oil Recovery

The well-spacing factor, in a secondary-recovery operation should give weight to the relative number of input and producing wells since one input well may affect several oil wells. The authors somewhat tentatively adopted the geometric mean of the oil-well and input-well spacings, i.e., the square root of the product, acres per oil well times acres per air well. On 100 acres, 99 wells will give a spacing of 1.01 acres per well. If there are 66 oil wells and 33 input wells, the effect of the gas drive will be more pronounced than if there are 90 oil wells and 9 input wells. The well spacing is the same in either case but the geometric mean factor defined above will be 2.14 in the first case and 3.51 in the second.

There appears to be a definite relation between ultimate oil recovery and well spacing. If the well spacing is decreased to small values and the distances between wells becomes absurdly short, the oil recovery will increase more and more slowly, tending to approach as a limit the total amount of recoverable oil in the sand. On the other extreme, where the spacing becomes so great that the input wells do not affect the producing wells, the recovery will approach zero.

A curve of this shape may be expressed by the general formula:

$$y = ae^{-bx^P}$$

A reasonable value for a must be assigned by deducting the unrecoverable oil from the total oil in the sand. In the Venango district the constant a becomes 140. Values may be assigned as follows:

$y = R$ = cumulative ultimate recovery, barrel per acre-foot.
$x = F$ = square root of product, acres per oil wells times acres per air well
$a = 140$
$e = 2.7183$ (base of Naperian logarithms)
b and P = constants depending on local conditions.

It is necessary to relate the spacing to the fraction of total recoverable oil that will be recovered, instead of to the actual oil recovered. The equation becomes:

$$R = e^{-0.29F^{1.09}}$$

Where R equals fraction of total recoverable oil recovered at geometric mean spacing F.

The determination of the most profitable, or optimum, well spacing is an exceedingly complex and difficult problem. The following is a suggested method for determining the optimum well spacing for any set of conditions, although it is admitted that the method is not entirely satisfactory, because it leaves out the important consideration of speed of recovery.

Total quantity of recoverable oil per acre will be equal to the sand thickness T multiplied by the quantity of recoverable oil per acre-foot, which in the Venango district is the oil in excess of 150 bbl. per acre-foot ($C - 150$). Fraction of oil to be recovered (R) will be approximately

$$e^{-0.29F^{1.09}}$$

The exponent of F, 109, is so nearly 1.0 that it may be neglected. The value of F will be the well spacing multiplied by the proper factor to convert it to the geometric mean value explained previously, which for the 7-spot pattern is 2.12. Well spacing will be the area of lease in acres (A) divided by the number of old wells (W) plus the number of new wells (N).

The net return per barrel from this oil will be the selling price (K) less the lifting cost per barrel (L). The development cost per acre will be the cost per well (J) multiplied by the number of new wells drilled (N) and divided by the number of acres in the lease (A).

Net return per acre

$$= (K - L)(C - 150)Te^{\frac{-0.29 \times 2.12 \times A}{W+N}} - \frac{NJ}{A}$$

This formula leaves out consideration of the beneficial effect of close spacing as the leases studied did not allow derivation of a quantitative relation between spacing and time of recovery. The writers' data showed clearly that close spacing increases the rate of recovery and accelerates the rate of production decline, so that not only does close spacing result in greater ultimate recoveries, but the oil is recovered faster.

Beneficial Effects of Gas or Air Drive

If a certain development will produce a certain quantity of oil in 10 years from a given area, with oil production declining in a logarithmic manner, the present worth of the future income will be about 85 per cent of today's value of the total quantity of oil. If 20 years is required to recover the same amount of oil from the same property, the present worth of the future income will be about 65 per cent of today's value of the oil. If other conditions are the same, it is about 25 per cent more profitable to extract the oil from a property in 10 years rather than 20 years.

Closer spacing and more rapid recovery will result in decreased lifting costs and more efficient extraction of the oil in the sand. Use of high pressures at the start will result in the removal of some of the oil from the less permeable sections of the sand.

The paper also includes a discussion of the various gas and air drives in Pennsylvania outside the Venango district.

A.P.I.—Condensed from the paper presented by the authors at the spring meeting of the eastern district of the American Petroleum Institute, Division of Production, held in Pittsburgh, Pa., April 17-18, 1941.

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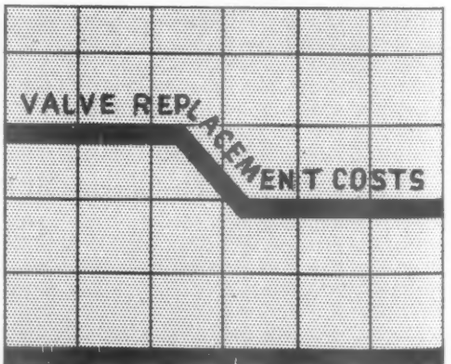

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Automatic Controls Close Wells When Tank Battery Is Filled

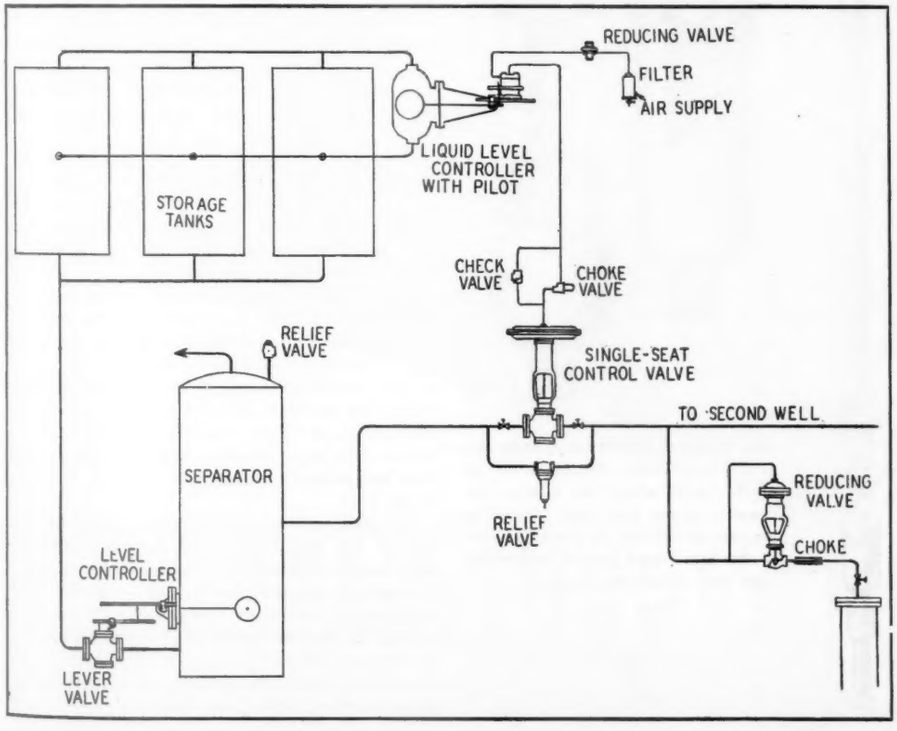
By D. H. STORMONT

ON the Cowden lease of Phillips Petroleum Co. and Pure Oil Co. in the Goldsmith field of Ector County, West Texas, a two-well tank battery has been equipped with valves and controls for automatically shutting in the wells when the tank battery is filled. This experimental equipment has been satisfactorily operating for 10 months. The equipment also provides means whereby individual wells may be stopcocked from the central tank-battery manifold. Judging from operations of the experimental battery, installation of this equipment, at each tank battery on the Cowden lease, it is estimated, will result in switchers' labor being reduced by about 40 per cent, and by reducing the number of trips to open and close the wells, car mileage of the pumpers should be cut almost in half. Tests indicate, also, that through use of stopcocking, the gas-oil ratios of the wells can be reduced almost 100 cu. ft. per barrel.

Hookup of the two-well battery is shown in the accompanying diagram, the equipment consisting essentially of: (1) An 8-in. liquid-level controller with pilot on the tank battery. (2) A single-seated diaphragm-operated pressure regulator and oil valve installed between the manifold and separator. (3) A 1,500-lb. working-pressure regulator installed behind a positive choke, which follows an adjustable choke, at each of the wells. (4) Standard separator float control. (5) A spring-loaded relief valve on a bypass around the pressure regulator at the tank-battery manifold.

The lease tankage is composed of 300-bbl. tanks, hooked up so that wells may be produced into all or any one and equalized through the basic sediment drawoff lines. The volume of oil that is to be produced before the wells are shut in is thus determined by the number of tanks hooked to the separator flow line. Rate of flow from each well is controlled by size of positive choke.

Below: Diagram of automatic equipment for shutting in wells after the tank battery is filled



The 8-in. float control is installed on a 2-in. riser connected to the basic sediment drawoff line at the front end of the battery. Whenever the fluid level in the riser (which is the same as that in the tanks) reaches the float, it actuates to place the pilot control in operation. Action of the pilot shuts off the gas supply (from the separator) to the diaphragm of the pressure regulator and this release in pressure on the diaphragm automatically allows the oil valve to close. Closing of the valve places a back pressure on the manifold line, and in turn on the flow lines from the wells to the manifold. Whenever the back pressure reaches 75 lb. per sq. in., the pressure regulators at the wells act to close the flow lines and shut in the wells. Once the wells are closed they so remain until pressure is applied on the diaphragm of the regulator at the manifold to reopen the oil valve. This is accomplished by manually resetting the pilot operated by the float control.

Left: Pressure regulator installed on the flow line of a well in the Goldsmith field. The regulator acts in conjunction with a master regulator and oil valve to shut in the well. Below: Liquid-level controller installed on a 2-in. riser at a two-well tank battery in Goldsmith field

As the flow lines and manifold fittings are 125-lb. working pressure, a 1-in. 200-lb. relief valve is installed on a bypass around the manifold oil valve. This relief valve is set at 100 lb. In the event of the pressure regulator at a well failing to operate properly, the relief valve will thus open and the flow bypassed to the separator. The separator is also equipped with a 100-lb. relief valve so that should pressure become too high

(Continued on Next Page)

Cement Spray Bailer Used To Combat Caving Shale

By A. C. MacINTYRE

CAVEY shales, one of the troublesome problems of drillers of deep wells in the Appalachian fields, are being handled quite successfully by use of a cement spray bailer. The device does not completely eliminate the problem, and there are times when there is no other remedy than to cement and drill through the troublesome sections, but it has proved effective in many cases.

The cement spray bailer, as its name implies, sprays a thin coating of cement on the face of the shales and forms a crust which aids in preventing caves. The cost of such spraying is much less than a full-hole cementing job and drilling through. The shales can be sprayed much faster than the time required for a full-hole job. Use of the device thus reduces drilling time lost in cementing in and at the same time provides a better hole, often preventing costly fishing jobs.

There are several types of bailers on the market. One consists of two attachments which screw on the top and bottom of several joints of 3-in. tubing. One contractor generally uses three joints, each about 20 ft. long, thus giving him a bailer about 60 ft. long. One type trips, opening the jets, when it strikes the bottom of the hole. Another is operated by a weight dropped down the line. In one type the cement is ejected from two holes, one directly opposite the other. In another type there is a ring of holes around the bottom of the bailer.

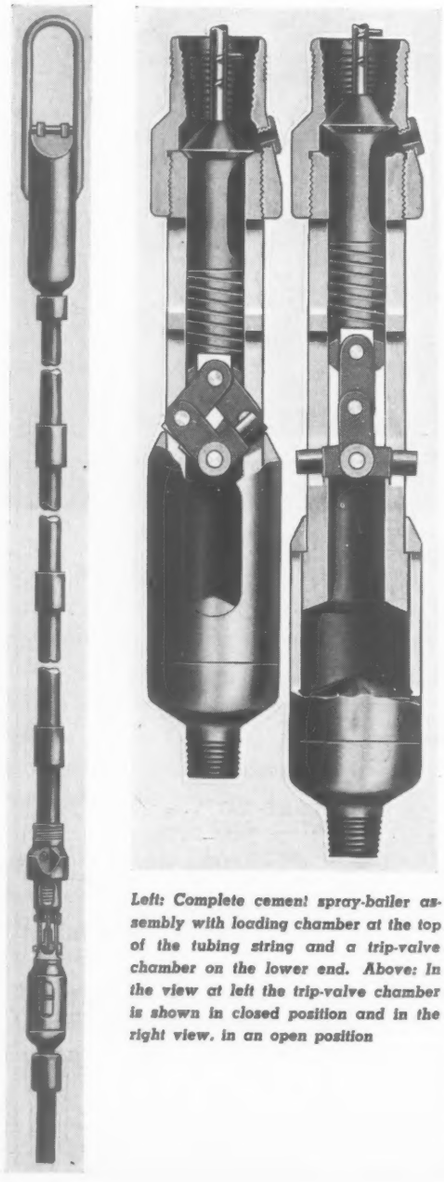
The cement is sprayed on the face of the shales as the bailer whirls about in the hole, rotated by the spinning of the sand line, which turns, as all contractors know, when a weight is suspended from the wire. The rate of the spin lessens as the bailer becomes lighter, due to the cement emptying from the bailer.

The chief cave trouble encountered in the Appalachian fields is in the Lower Devonian shales which lie just above the Onondaga lime, cap rock for the Oriskany gas sand. In some cases they are about 1,000 ft. thick and experienced drillers are ever on the alert for signs of a cave while drilling through them. Some drillers make a practice of spraying the hole once or twice a week when they reach that section.

Ordinary cement is used by many drillers, who say they have not found it necessary to add a fast drying agent due to the heat of the earth. Only cement and water are used in the mix and there is no set ratio for the parts of each used. The solution must be thick enough to permit the concrete to set, but not too thick to retard the spurting of the liquid through the jets in the bailer. The mix, generally, is about the consistency of thick paint. The bailer shoots out the cement at considerable pressure to force it into the face of the shales. Tests on the derrick floor have resulted in the mix being ejected a distance of about 20 ft. by the bailer.

The driller can estimate the amount of hole he is spraying by first gaging the time required for the bailer to empty itself above ground. Then by regulating the speed the bailer is drawn up the hole, the driller can judge the amount of hole sprayed. One contractor generally sprays the hole three times and the concrete usually sets fast enough to permit the second and third coats in the time required to fill and run the bailer. The bailer he uses holds three sacks of cement when mixed. Thus it requires some nine sacks of cement to spray about 700 ft. of hole, according to his calculations.

Spraying, in addition to aiding in preventing caves, also provides better holes for normal drilling, one contractor said. Such better holes make fishing jobs easier. Quite often the spraying prevents the shale caving in on top of the tools, which generally calls for a real fishing job.



Left: Complete cement spray-bailer assembly with loading chamber at the top of the tubing string and a trip-valve chamber on the lower end. Above: In the view at left the trip-valve chamber is shown in closed position and in the right view, in an open position

The successful use of the spray bailer in the deeper holes has attracted the attention of shallow-well drillers and they are beginning to use the device in that type of drilling. Some are using the bailer in cleaning out and fixing up old holes. In the shallow wells the cavey streak is not as thick as in the deeper wells, generally averaging about 50 ft.

In some sections of the Appalachian fields, however, the terms "deep" and "shallow" do not mean the depth of the hole from the surface of the earth. The terms usually apply to the horizon being sought. Deep wells usually mean those to the Oriskany sand. Shallow wells are usually those seeking oil or gas in sands lying above the Oriskany. In some cases shallow wells are 3,000 ft. deep while some so-called deep wells do not go that far down.

Automatic Controls Close Wells When Tank Battery Is Filled

(Continued from Preceding Page)

at this point, the valve will be opened and the pressure relieved. As a final precaution to prevent bursting of flow-line standard fittings, low-pressure couplings are placed in the flow lines 100 ft. from the battery.

To prevent the separator from being slugged with oil by the wells starting to flow at the same time, the following means are used. First: In the air-supply line to the diaphragm of the pressure regulator a choke is used to cause pressure on the diaphragm to be applied very gradually. This causes the diaphragm-operated oil valve to open very slowly, several minutes being required for it to open completely. Second: The pressure regulators at the wells are set so that there is a different interval between the release of back pressure on the flow lines and when the valves controlling oil flow are opened; i.e., after the first well has started flowing the second will not start producing for about 1½ minutes. The combination of these two actions causes the flow into the separator to build up gradually.

This equipment also provides means whereby individual wells may be stopcocked from the central tank-battery manifold, eliminating the necessity for switchers driving to the individual wells to open and close them. This is accomplished by closing the manifold valve on the flow line to the well (which is behind the diaphragm-operated oil valve). The back pressure thereby built up will close the pressure regulator at the well and shut in the well.

This automatic hookup, designed by Phillips Petroleum Co. engineers, is of especial value on large leases such as the Cowden, which contains 113 wells on 20-acre density. Also where a wide well spacing is used, or where a lease is remotely located. While the control has been installed only on the two-well tank battery, Phillips is now contemplating installation of like equipment on an 18-well battery in the same field.

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Heavy-Duty Lubricating Oils As Measured by Engine Tests

By H. C. MOUGEY
Technical Director, Research Laboratories Division, General Motors Corp.

Mr. Mougey, technical director of the General Motors Corp. research laboratories division, entered the employ of that company in 1917. Graduating in chemistry at Ohio State University in 1911, he was research chemist for a paint and varnish company prior to joining General Motors. With the company his work has been diversified, his main interests being automobile finishing, plating and lubrication. In this article, which was delivered before the semiannual meeting of the National Petroleum Association at Cleveland, Ohio, April 23-25, Mr. Mougey discusses laboratory engine tests of lubricating oils. Their value in testing an oil's properties and in predicting the performance of an oil under heavy-duty service conditions is described.

OIL used in lubricating an automobile engine is just as much a part of the engine as a piston, a valve, or a crankshaft. The properties which an oil should have to be satisfactory in an engine are just as much subject to the factors of engine design and operating conditions as a piston, a valve, or other engine part. In the early days of the automobile industry, oil was not the limiting factor on engine performance, and in general, the failures in the very early engines were due to weaknesses in design or composition of parts such as pistons and valves, rather than due to causes for which the crankcase oil was responsible.

However, over a period of years these mechanical weaknesses have been overcome to a large extent and, at the present time, one of the principal reasons why an engine must be overhauled and repaired is because of the effects on the other engine parts of the decomposition products from the crankcase or combustion chambers. Ring sticking and wear of the cylinders, rings, or pistons and the effects of carbon or sludge or varnish on the piston surfaces are typical examples. The lack of lubrication due to carbon or to sludge plugging oil passages, and bearing corrosion due to acids formed by oxidation of the oil are other examples.

Service Test Needed

There are many standard oil tests which can be made in the laboratory, but most of these tests are "identification tests" which give information on such factors as methods of refining or the source of the crude, but most of these methods[1,2] are of little value in actually predicting the performance of the oil under service conditions, especially those typical of "heavy duty." The tests we would like to have are those which would help us predict something about the resistance of the oil to thermal decomposition and to oxidation, and give us some idea as to what effect these thermal-decomposition and oxidation products would have on the operation of the engine.

The importance of oils being high in resistance to oxidation if they are to give good results in service, and the fact that the conventional tests usually used in oil specifications are not sufficient to insure that oils will perform satisfactorily has been recognized for many years. At the time of the first World War, on account of the importance of this subject from the standpoint of national defense, a committee[3] was formed "under the auspices of the Government" including, among others, "the Bureau of Standards, Bureau of Mines, Army, Navy, and the Council of National Defense." The report of this committee was given by C. W. Stratford. Among other things, Mr. Stratford said:

"In the light of the most recent study and exhaustive experimentation, the oxidation test appears to be the only dependable and satisfactory method by which the stability of oils can be predicted when they are used in service."

He also reported that, "poorly refined oils, . . . usually show high varnish values."

"Varnish" Characteristics Not Correlated

This committee developed tests for "varnish" but they did not incorporate these "varnish" tests into the specifications they proposed because they did not have sufficient correlation between their laboratory oxidation tests and performance in service.

Experience has shown that the best way in which to test or develop an oil or to find out what an oil will do in an engine under any definite set of operating conditions is to operate the engine with the oil, controlling the test conditions as completely as possible.

For years many laboratories in the oil and automotive industries have been running engine tests on different engines under different operating conditions. However, it is obviously impossible for the oil companies to make tests with all commercial engines or for the engine laboratories to make tests on all commercial oils. What is desired is a method of test by which the properties of any oil may be measured and by which any engine can be tested to determine what oil properties give best results in the engine.

For use in any kind of engine, including gasoline and diesel, an ideal oil should not oxidize in the crankcase, so that no acid or sludge or other oxidation products would be formed in the crankcase; and it should not form deposits by thermal decomposition in the combustion chamber. Since such an oil is not a commercial possibility, it is desirable that the oil have these properties to as great an extent as possible and that the oil also have the property of "detergency" which tends to prevent any soot or other decomposition products from adhering to the surfaces of the engine parts. This means that tests should be developed which will evaluate oils in respect to oxidation resistance and detergency.

Several Tests in Use

At the present time several engine tests are in general use for this purpose. Among these are the Caterpillar 1,000-hour and 480-hour tests,[4] the Detroit diesel 500-hour test[5] and the Chevrolet 4,000-mile or 67-hour test.[6] The principal operating conditions for these tests are given in condensed form in Table 1.

The properties of the oils which are being tested by all of these test procedures are both detergency and oxidation resistance but to different degrees in the different test procedures. Under detergency tests we include:

1. Resistance to ring sticking.
2. Freedom from objectionable carbon deposits on the top-piston lands.
3. Prevention of soot or other decomposition products from sticking to pistons or other engine parts.

Under resistance to oxidation we include:

4. Resistance to increase in viscosity.
5. Resistance to formation of sludge and "coffee grounds."
6. Resistance to the formation of varnish.
7. Resistance to the formation of acids.
8. Resistance to corrosion of alloy bearings by acids formed by oxidation of the oil.

Under the conditions chosen the Caterpillar 1,000-hour and 480-hour tests stress detergency with minor importance given to oxidation resistance. The Detroit diesel 500-hour test also stresses detergency, although to a much less extent, but the property of oxidation resistance is emphasized to a greater degree. The Chevrolet 67-hour test pays little attention to detergency but stresses oxidation resistance. Of course, it should be possible to modify these test conditions so that the emphasis could be shifted towards one direction or the other. By proper modification of the test conditions it should be possible to measure all

(Continued on Page 42)

TABLE 1—PRINCIPAL OPERATING CONDITIONS OF SEVERAL ENGINE TESTS

	Caterpillar* (single-cyl. test engine)		Model 71 G. M. Diesel	Chevrolet
	1,000-hour test	480-hour test	(3, 4, or 6-cyl.)	(6-cylinder)
R.p.m.	850	1,000	2,000	3,150
Load (b.h.p.)	16.7	19.8	27 per cyl.	30
Crankcase oil	130° F.	145-150° F.	230° F.	280° F.
Jacket water (outlet)	170-180° F.	175-180° F.	180° F.	200° F.
Oil consumption	.....	.....	0.06 lb./hr./cyl.	1 qt./500 miles
Bearings	babbitt	babbitt	copper-lead	babbitt (with one copper-lead)
Length of test	1,000 hours	480 hours	500 hours	4,000 mi. (67 hr.)
Oil changes	60 hours	120 hours	none	none

*Both the former 1,000-hour run and the present 480-hour run are tabulated.

METALS In REFINING

By W. L. NELSON

Steel Casting and Furnace Auxiliaries

THE importance of tube materials was emphasized in two earlier articles in this series. Nevertheless, there are many other parts of pipe stills that are subject to extreme conditions. Among these are return bends, bolts for bends or flanges, plugs, and tube supports. Castings such as peep boxes or explosion doors on stills are essentially external trim and plain gray cast iron is employed for such parts. Stack dampers, stack rings, thermocouple tubes, flue-gas recirculation fans, and other miscellaneous furnace auxiliary parts have not attracted great attention—and in general, suitable materials for their construction can be selected by an inspection of Tables 4, 6 and 7 given in the discussion which follows. In some instances the use of superior materials is justified because of the intricacy of certain furnace auxiliaries and in these instances the most resistant steels that are listed may be employed, or even more resistant materials such as the nickel (or german) silvers or chromium nickel alloys may be employed. These special alloys will be discussed in some detail in a later article which will pertain to instruments.

Return Bends

The types of steels used for bends are essentially the same as those employed for tubing (Tables 1 and 2 in this series of articles) except that such a great variety of materials is not justified. The bends are not exposed directly to the furnace atmosphere and hence rusting or oxidation is not as great a difficulty as with tubes. Likewise, the bends are not exposed to radiation from the flame and hence coke does not tend to deposit in them nor do they attain a temperature higher than the fluid that flows through them. In these respects the bends are not exposed to as severe conditions as the tubes.

Bends are, however, not symmetrical in shape and therefore localized internal stresses may occur at corners, under the bolts or studs, surrounding the plugs, etc. These difficulties cannot be analyzed mathematically with complete success and—coupled with the fact that bends are fabricated by casting—the strength of bends cannot be ascertained by simple inspection of the tensile or creep-strength properties of the base metal. Rather than to utilize a large number of alloy steels, the manufacturers of bends have chosen to rely upon excellence of mechanical design and upon perfection in casting practice. It is obvious that in many instances the greater strength of an alloy steel, or its resistance to severe internal corrosion, may make the use of an alloy steel necessary or profitable. Steels that have been used extensively by the Ohio Steel Foundry Co., and the Key Co., are indicated in Table 4. Bends have been built for temperatures up to 1,250° F. and in such heavy sections that internal pressures of 9,000 lb. per sq. in. were withstood.

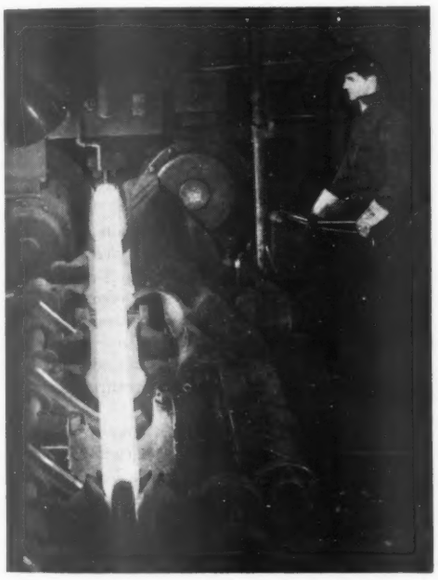
Plugs, thermocouple wells, etc., frequently "freeze" firmly into the body material and cannot be removed except with great difficulty. In situations in which strength or corrosion conditions will permit, aluminum bronze plugs are employed because this material has a larger coefficient of expansion than do steels and hence plugs constructed of such a material will loosen themselves upon cooling and become very tight when hot. To avoid freezing, it is also advisable to use corrosion-resistant materials such as forged high chromium nickel steels. Plain forged steel is resistant to corrosion but it tends to freeze. In spite of what has been said, it is nevertheless common practice to use plug materials that are similar in composition to the material used in the body of the bend (Table 4). For conditions of extreme corrosion, 20-10 chromium nickel steel plugs are employed.

Metal gaskets are required for some bends which are connected to the tubes by metal-to-metal joints rather than by rolling. The matrials used for gaskets must be ductile above all else so that a tight fit will be obtained. Unfortunately, the common ductile materials do not exhibit much resistance to corrosion by oil. The materials that are used are pure iron (armco, etc.), pure copper, pure aluminum, and very low carbon stainless (14 per cent chromium) iron. Of these, only the stainless iron is resistant to sulfide corrosion.

Bolting for bends and flanges must be even stronger than the body material because from a mechanical standpoint they have smaller cross-

Other articles pertaining to the use of metals in the petroleum industry have been: Metals in Drilling, 12 articles in 1939; Metals in Production, four articles in 1940; Composition and Scaling Resistance of Pipestill Tubes, p. 82, April 3, 1941; Corrosion Resistance and Strength of Pipestill Tubes, p. 179, April 17, 1941. About 10 additional articles on the metals used in refining will be presented in future issues of The Oil and Gas Journal.

The recommendations given in these articles are not necessarily the choice of the editorial staff of The Oil and Gas Journal. All of the metals or alloys that are referred to herein have been mentioned in various publications in the trade magazines or in the bulletins of metal product manufacturers.



Courtesy Timken Roller Bearing Co.

A solid steel billet has just been pierced in this Mannesmann piercing mill. After the mandrel is withdrawn, tube will roll down decline at left to sizing mill

TABLE 5—PROPERTIES OF THREE COMMON BOLTING STEELS

Kind of steel—	Approx. chemical analysis, % Carbon	Chromium	Others	Strength,* lb. per sq. in. at— 800° F.	900° F.	1,100° F.
S.A.E. 4140	0.4	0.95	0.2 Mo	85,000	70,000	.....
S.A.E. 3140	0.4	0.6	1.25 Ni	90,000	73,000	.....
Tungsten chromium	0.35	0.45	1.0 W	.....	90,000	45,000

*Oil quenched and tempered.

TABLE 4—CASTING STEELS FOR BODIES, HOUSINGS, AND PLUGS OF RETURN BENDS[18 19]

No.	Steel—	*Chemical analysis, per cent Carbon	Chromium	Nickel	Moly	Physical properties Yield point p.s.i.	Elongation %	Brinell hardness	Creep† strength p.s.i.	Service conditions—
1.	Carbon	0.27	...	..	..	45,000	25	150	2,200	Strength alone below 900° F.
2.	Nickel	0.2	...	1.9	..	50,000	25	190	.....	Subzero service requiring ductility
3.	Carbon moly	0.3	..	..	0.5	50-55,000	21	190	3,600	Strength alone below 975° F.
4.	Nickel chromium moly	0.27	0.6	1.5	0.4	60,000	18	210	.....	Strength alone below 1,000 F.
5.	Nickel chromium moly	0.3	0.8	2.0	0.4	67,000	20	210	4,725	Strength alone below 1,025° F.
6.	Chromium moly	0.27	1.4	..	0.5	57,000	20	210	.....	Strength alone below 1,025° F.
7.	Chromium moly	0.25	2.1	..	0.5	57,000	21	210	7,100	Strength alone below 1,100° F.
8.	Chromium moly	0.22	5.0	..	0.5	70,000	19	205	6,100	Corrosion and strength below 1,100° F.
9.	Chromium moly	0.15	9.0	..	1.3	45,000	24	190	5,800	Corrosion and strength below 1,200° F.
10.	Chromium nickel	0.12	18.0	8.0	..	32,000	37	...	13,000	Severe corrosion and strength below 1,300° F.

*Approx. 0.30-0.75% silicon; 0.4-0.9% manganese except for No. 2 which contains 0.7-1.0% Mn. †For 1 per cent creep in 100,000 hours at 1,000° F.

TABLE 6—MATERIALS FOR TUBE SUPPORTS IN THE RADIANT SECTION OF STILLS

No.	Kind of chromium or chromium nickel steel—	Approx. chemical analysis, %* Chromium	Nickel	Moly	Others	Scaling resistance—Scaling starts (deg. F.)	Relative to stainless steel‡ At 1,300° F.	At 1,600° F.	Working strength (lb. per sq. in.)† At scaling temp.	At 1,300° F.	References
1.	13-0	12-13	..	..	..	1,250	100	100	2,000	1,500	3, 20
2.	13-0 Mo	13	..	0.5	..	1,250	90	84	2,000	1,500	20
3.	15-0	15	..	..	..	1,300	75	75	1,400	1,400	20
4.	17-0	16-17	..	..	..	1,500	10	25	Low	1,400	3, 20
5.	27-0	26-27	..	..	..	1,900	Low	6	Low	1,200	3, 20
6.	18-8	18-19	8-9	..	..	1,600	20	53	400	4,000	3, 20, 21
7.	18-8 Si	18	8	..	2.5 Si	1,700	6	19	....	....	20
8.	18-8 Ti	18	8	..	Ti	1,600	..	..	400	4,500	3, 20
9.	18-8 Cb	18	8	..	Cb	1,600	..	..	400	4,500	3, 20
10.	18-8 Mo	17-18	11-12	2-3	..	1,650	20	21	700	10,000	3, 20
11.	18-8 Se	18	8	..	0.2 Se	1,600	..	..	....	....	20
12.	21-9	21	9	..	..	1,800	..	..	1,200	4,000	18
13.	22-8 Al	22	8	..	1.0 Al	1,800	..	(7)	1,600	12,500	21
14.	23-6	23	6	..	..	1,800	..	(8)	....	....	21
15.	25-12	24-26	12-13	..	..	2,000	(3)	9	600	4 800	3, 18, 20
16.	25-20	25	20	..	..	2,000	..	8	600	5,200	20
17.	26-11 Mo	26	11	1.0	..	2,100	..	..	Low	6,000	17
18.	28-2 Si	28	2	..	1.25 Si	2,100	(1)	(4)	300	12,500	21
19.	28-8	28	8	..	..	2,000	..	(5)	....	....	18
20.	28-11 Si	28	11	..	1.25 Si	2,100	(1)	(4)	....	....	21

*Silicon content (0.5-1.25 per cent) and manganese content (0.4-2.0) varies widely.
†Based on creep strength of 1 per cent in 10,000 hours.
‡Numbers in parenthesis are estimated by the author.

sections than the main bend. High-strength alloy steels, heat-treated to develop maximum toughness and strength are employed. Almost any of the common S.A.E. steels such as nickel steels (S.A.E. 2100 and 2300 series containing 1.5 and 3.5 per cent nickel), the chromium nickel steels (S.A.E. 3100, 3200, 3300 and 3400 series) or the molybdenum steels (S.A.E. 4100, 4300, 4600 or 4800 series containing nickel and/or chromium) have been used. Three common bolting steels are indicated in Table 5. All of these meet A.S.T.M. Specification A-96-33, for Class C alloy steel bolting material for high-temperature service.

Supports or hangers for tubes are the only uncooled metal parts of a still that are exposed directly to radiation from the flame and hence they are rapidly destroyed by oxidation and must maintain their strength at temperatures of 1,100°-1,500°. Certain other parts, notably fans for flue-gas recirculation, stack dampers and convection-section tube supports, are also exposed to the hot furnace gases but they normally operate at the low temperature of 600°-1,000° F. These conditions are more severe than have been heretofore discussed in this series of articles except for conditions of extreme sulfide corrosion.

TABLE 7—MATERIALS FOR CONVECTION-SECTION SUPPORTS OF STILLS

No.	Kind of material—	Chemical analysis, per cent Carbon	Silicon	Chromium	Nickel	Others	Approx. scaling temp., °F.	Reference
1.	Plain cast iron	3.2	1.8	..	..	..	600	
2.	Chromium iron	3.0	1.2	0.5	..	0.75 Cu	1,000	22
3.	Nickel chromium iron	3.1	1.15	0.7	1.5	..	1,100	23
4.	Nickel chromium iron	3.2	1.5	0.75	2.0	..	1,100	24
5.	Nickel chromium iron		1.8	0.5	2.5	..	1,100	25
6.	Nickel iron		2.2	1.5	19.0	4.5 Cu	1,200	25
7.	Nickel chromium iron	2.9	1.5	3.5	14.5	6.0 Cu	1,250	24, 25, 26
8.	Chromium steel	0.15	0.5	8.0	..	..	1,250	24
9.	Stainless steel	0.15	0.5	13.0	..	..	1,250	3, 20

With respect to scaling at elevated temperatures, three types of furnace atmospheres may be encountered, namely, oxidizing, sulfidizing and reducing. Oxidization and sulfidization are the conditions usually found in refinery pipe stills and it is fortunate that the same general type of steel is useful in combating both of these types of scaling. Chromium (13-25 per cent) nickel (8-20 per cent) steels resist both oxygen and sulfur dioxide at high temperatures. Reducing furnace atmospheres (high in carbon monoxide or unsaturated hydrocarbon gases) are not common in the petroleum industry but if they are encountered, the steels that are recommended are high in nickel and lower in chromium in such combinations as 65-15, 35-15, or 25-20. These steels are usually free from scaling under reducing conditions up to temperatures of 2,000°-2,200° F.

The general compositions and properties of steels for tube supports in the radiant section of a pipe still are given in Table 6 and materials for tube supports, dampers, etc., in the convection section of the still are given in Table 7. The radiant-section supports are cast steels whereas convection-section supports are usually constructed of cast iron.

Little can be stated concerning the strength of cast irons at elevated temperatures. In general, however, the strengths of the irons will usually be in excess of 6,000 lb. per sq. in. at a temperature a little lower than the scaling temperature.

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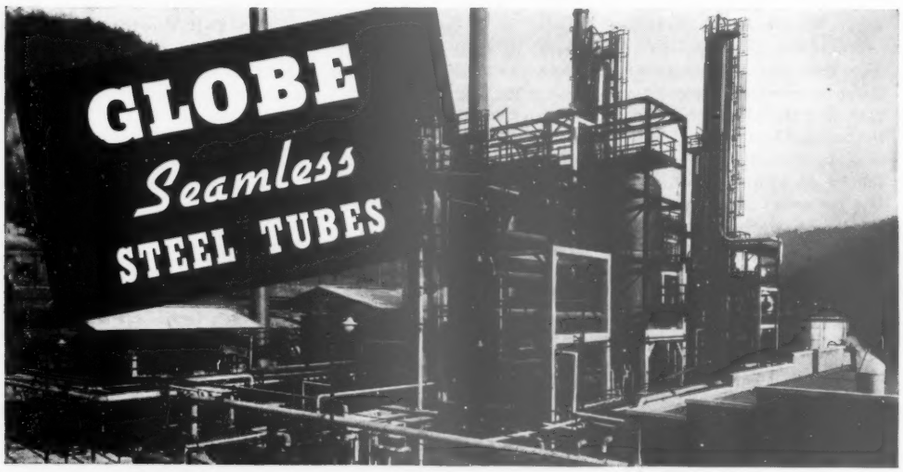

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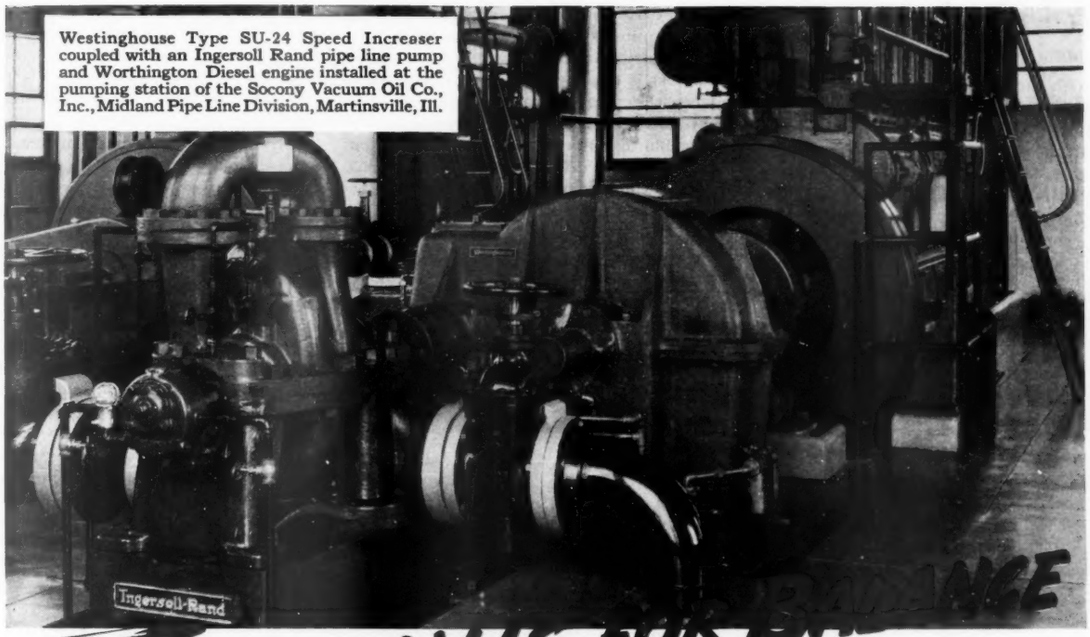

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Westinghouse Geared Drives

Heavy-Duty Lubricating Oils As Measured by Engine Tests

(Continued from Page 38)

these properties with any one engine. However, it would require time to work out all these details.

Since the Chevrolet 67-hour test is much shorter and cheaper than the other two tests, and since it measures resistance to oxidation, and since resistance to oxidation is of greater importance in the average gasoline engine than detergency, it seems desirable to concentrate work on this test so that the various laboratories in the oil and automotive industries can all evaluate oils in respect to the properties affected by oxidation.

At the present time it is generally agreed that the Caterpillar test is the best standardized test for detergency. However, this test requires a long time and it is quite expensive. Work is being done to develop a shorter and less expensive test. When and if this test is developed, it should be possible for all laboratories to evaluate oils in respect to detergency and resistance to oxidation. It should also be possible to calibrate different types of engines, operated under different service conditions, and know the kinds of oils that will give best results under these various operating conditions.

However, before this can be done in a really satisfactory manner, it is necessary that the effects of various operating details must be appreciated so that these factors can be controlled closely enough to permit tests made in different laboratories to check with each other. It is desired that if any particular oil is tested in a number of different laboratories, the appearance of the engine parts and the oil analyses should check in all of the laboratories. At the present time any one laboratory can grade several oils in their relative order of merit, but the appearance of a piston from an oil test made in one laboratory, for example, may not check with that of a piston from a test made on the same oil in another laboratory. It is well known that iron is a powerful oxidation catalyst and that the amount of iron picked up from an engine by an oil in an oil test depends upon such factors as how thoroughly has the engine been run in, how long since the engine was overhauled, and how long since the piston rings were changed and how the engine was cleaned prior to the test. These and other factors are being studied in an intensive manner and as soon as these details are worked out it should be possible to secure check tests in any laboratory which follows the necessary test conditions, and any oil may be evaluated in respect to properties listed under detergency and resistance to oxidation.

Conclusions

1. The oil used in an automobile engine is just as much a part of the engine as a piston, valve, or a crankshaft.

2. At the present time one of the principal reasons why an engine must be overhauled or repaired is because of the effects on the other engine parts of the decomposition products from the crankcase or combustion chambers.

3. The conventional laboratory tests are useful as "identification tests" but most of these tests are of little value in predicting the performance of the oil in an engine.

4. Experience has shown that the best way to test an oil is to use it in an engine under definite operating conditions.

5. By engine tests which are now in general use oils can be evaluated in regard to their performance in engines.

6. Detergency and resistance to oxidation are properties which are of very great importance in the performance of oils in engines.

7. The properties measured in detergency tests are resistance to:

(*a*) Ring sticking.
(*b*) Carbon formation on top-piston land.
(*c*) Soot sticking to engine parts.

The properties measured by resistance to oxidation are resistance to:

(*d*) Viscosity increase.
(*e*) Formation of sludge or "coffee grounds."
(*f*) Formation of varnish.
(*g*) Formation of acids.
(*h*) Corrosion of alloy bearings.

8. It is believed that work now in progress in a number of laboratories will lead to standardized engine tests by which the entire oil and automotive industries may: (*a*) Evaluate oils. (*b*) Select oils for different engines and operating conditions. (*c*) Develop better oils. (*d*) Increase the life and output of engines.

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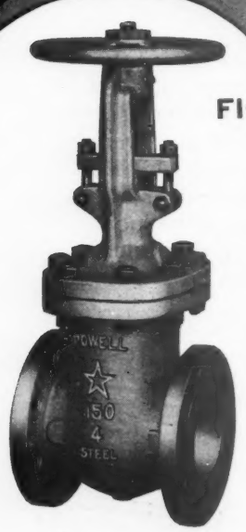
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Pipe-Line Activity

Standard Oil Co. (Indiana) Awards Contracts for Gasoline Lines

Contracts were let last week by Standard Oil Co. (Indiana) for the construction of two lines which will extend from the company's Sugar Creek-Council Bluffs gasoline trunk line. Pipe used in this program will be 6-in.

The company has awarded a contract to Williams Brothers Corp. for 109 miles from Burlington Junction, Mo., to Des Moines, Iowa. Contracts for the construction of 168 miles between Council Bluffs, Iowa, and Sioux Falls, S. D., have been divided between two contractors. Ray L. Smith Contracting Co. will lay the section of line between Bronson, Iowa, and Council Bluffs. This contracting firm has been formed since the Truman-Smith Construction Co. was discontinued. Jones & Brooks, Inc., will lay the section between Bronson and Sioux Falls.

Williams Brothers Corp. will start construction on May 1 at Burlington Junction. At the same time Jones & Brooks, Inc., will start at Sioux Falls. A week later Ray L. Smith Contracting Co. will have work under way at Council Bluffs. It is expected that construction of this system will be completed July 1. According to present plans, gasoline and refined products will be moved through the system by one pumping station equipped with diesel engines which will be located at Council Bluffs.

Whiting-Indianapolis Line Specifications Are Issued

Standard Oil Co. (Indiana) has issued specifications to contractors for the construction of a 147-mile 8-in. pipe line for the transportation of gasoline and refined products from the company's refinery at Whiting, Ind., to Indianapolis, Ind. Bids will be submitted May 5.

Socony-Vacuum Prepares to Lay New York Gasoline Line

On May 20 operations for the construction of a gasoline and refined-products pipe line connecting Syracuse and Binghamton, N. Y., for Socony-Vacuum Oil Co., Inc., will get under way. This will connect with the company's gasoline pipe line laid last year between its refinery at Buffalo, known as the Atlas Works, and the terminal at Syracuse. The line will supply the shoe-manufacturing communities of Binghamton, Johnson City, and Endicott. It will be laid by O. C. Whitaker Co.

During the early part of this year the Socony-Vacuum organization has been acquiring right-of-way for pipe-line facilities to serve Ithaca and Elmira. Arrangements have been made to have this right-of-way available to the company January 1, 1942. This line will branch from the main line at Seneca Falls and follow the ridge of hills dividing Cayuga and Seneca lakes to a point southwest of Ithaca, where the line will branch, with one line going to Ithaca and the other to Elmira.

Stanolind Lets Contract To Rogers & Vaughn

Stanolind Pipe Line Co. awarded contract to Rogers & Vaughn for laying 26 miles of 6-in. and taking up 24 miles of 4-in. in Montague County, Texas. In addition, this firm is laying 8 miles of 4-in. discharge and gathering lines in the Voth pool area.

Wisconsin Commission Will Regulate Natural-Gas Lines

MADISON, Wis.—The Wisconsin Public Service Commission has announced that it had assumed jurisdiction over natural-gas companies and would hold hearings in order to consider applications for authority to serve Wisconsin cities.

The commission held a joint hearing with the Federal Power Commission to determine which agency should have jurisdiction. The commission then deferred its decision until a determination was made whether a certificate for proposed projects was required by the federal Natural Gas Act.

"After full hearings, the Federal Power Commission has determined it has no jurisdiction to issue certificates," the state body said.

The Wisconsin commission has assumed authority to reopen hearings on its own account to consider issues which were initiated last summer.

Applications now before the commission have been filed by the Independent Natural Gas Co., owned by the Phillips Petroleum Co., and the Wisconsin Natural Gas Co., of Delaware, which is affiliated with Natural Gas Pipeline Co. of America.

Independent Natural Gas Co. proposes to construct an 877-mile pipe line from the Texas Panhandle field through Oklahoma, Kansas, Missouri, Iowa, Illinois, and Wisconsin. It is planned to serve several cities in the southern part of Wisconsin.

Wisconsin Natural Gas Co. plans to connect with the pipe line of its affiliate tapping the Hugoton field in southwestern Kansas. The company proposes a main pipe line to Milwaukee

Sherman Completes Line to Hobart Field, Oklahoma

Howard J. Sherman and associates have completed a 4-in. pipe line from Hobart field of Kiowa County, Oklahoma, to a loading rack near Hobart and runs of crude oil from the field are due to resume. At the same time the Phillips Petroleum Co. will resume running oil from the field to its loading rack.

Stanolind Oil Purchasing Co. is buying the oil, which will be transported by tank cars from Hobart to Tribbey, Okla., and put into the company trunk line.

Runs from the field terminated April 1, prior to which time Sherman was moving oil by trucks to near Komalty, Okla., and loading on cars. At that time some of the leases were underproduced, while others were overproduced.

Right-of-Way for Gasoline Line Is Acquired in Panhandle

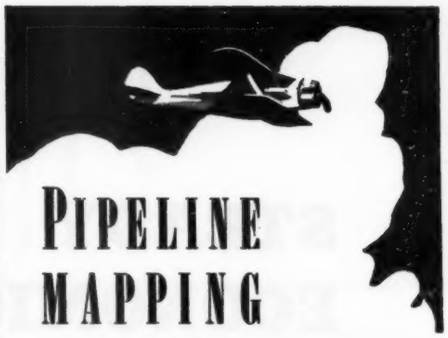
Right-of-way is being purchased in Cimarron County, Oklahoma, on a route which has been surveyed between Borger, Tex., and La Junta, Colo. The project is an undertaking of C. R. Moffitt, Blackwell, Okla., who carries on negotiations in the name of American Oil & Gas Co. It is reported that Rip C. Underwood, president, Danube Oil Corp., Amarillo, Tex., is connected with the project. An aerial survey was made 2 years ago for a 4-in. gasoline pipe line which has been proposed to serve Colorado Springs and other points. Phillips Petroleum Co., Shamrock Oil & Gas Corp., and Danciger Oil & Refineries, Inc., deny having any interest in the proposed line.

Canadian Western Will Lay 100-Mile Natural-Gas Line

Canadian Western Natural Gas Light & Power Co. will lay a 100-mile natural-gas pipe line during the summer months. Construction work is being handled by the company's organization. The line will transmit gas from the Kinsella field near Viking to Red River, Alberta. It will furnish gas to Wetaskiwin, Ponoka, and Red Deer, which have been without natural-gas facilities.

Leonard Increases Line Facilities in Michigan

Leonard Pipe Line Co. plans to build 16 miles of 4-in. pipe line between its Crystal and Alma, Mich., stations, D. E. Beach, vice president, announced. Line will parallel a 4-in. line between the two stations. The loop will increase capacity and facilities for transporting Illinois crude to Alma. Leonard takes Illinois oil delivery at Crystal from Sohio Pipe Line Co.



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Model No.	R-6-1	R-225
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Stroke, in.	7	7
Displacement, cu. in.	1187	1650
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1000 RPM	148	210
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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

For the second successive week, completions ranked well above those of last year, and about 10 per cent higher than the record of recent weeks. Last week's completions were six more than during the previous week, and there were no changes in distribution that might not be assigned to the normal irregularities resulting from weekly reports.

One of the most significant features of recent reports has been the high level of gas-well completions. During the past 4 weeks 206 gas wells have been completed as compared with 121 during the corresponding 4 weeks of 1940. These 206 completions have been divided as follows: 74 in the Appalachian area, 36 in Ohio, 18 in Kentucky, 11 in Southwest Texas, 9 each in Michigan and Oklahoma and the rest scattered. The fact that 144 of the new gas wells lie east of the Mississippi River shows the increasing importance of gas as an industrial fuel. Serious shortages are reported in some industrial areas and many of the wells completed are of such small capacity that they would not have been considered worth saving a few years ago. At first glance the drilling of a well 3,000 ft. deep for 50,000 cu. ft. of gas or less seems to represent an expenditure on which adequate returns would be impossible. However, this gas can be piped directly to plants replacing gas which would have to be purchased at around 50 cents per 1,000 cu. ft. and the consequent return of some $25 per day is greater than the returns on oil wells of comparable depth in many areas. Moreover, the cost of equipping and producing these wells is very much less than in the case of oil wells.

Wells at greater distances from industrial plants get from 12 to 25 cents per 1,000 cu. ft. at the well and even in the rich Elk-Poca district of West Virginia 8 cents is considered almost a distress price.

Recent developments in the deeper horizons of West and North Central Texas are arousing increasing interest. In addition to the Simpson and Ellenburger pays in Crane, Ward and Pecos counties, production from Silurian lime in the Shipley area, Ward County, will extend this activity westward. The Mississippi lime play in North Central Texas also has possibilities of westward extension down the flanks. Reserves in these older pays are thought by some to be comparable to those in the Pennsylvanian and Permian.

ILLINOIS: A new field is opened in White County in the Aux Vases sand after the discovery well showed oil in the Palestine and Cypress sands. In Wayne County, a well between the Zif, Bruner and Macklin pools brought in a new field and was one of the largest producers in the eastern part of the basin for many months. Wabash County added to the new pools with a Tar Springs producer near Mount Carmel. These discoveries after 5 years of development show that the Illinois basin play is not yet ready for the discard. Meanwhile the Benton pool in Franklin County continues to grow. This pool was practically condemned after geophysical prospecting moved the initial location to one where a dry hole was drilled. The discovery well, which was located by surface geology, was at the original location. Surface geology is also, apparently, not finished (p. 51).

SOUTHWEST TEXAS: Another offshore field is in prospect in San Antonio Bay. Gas and distillate has been found ¾ mile from the new Woodsboro discovery in Refugio County. The Agua Dulce play may be extended to the northeast by a gas-distillate discovery. Shield, East Premont and Muralla show important extensions (p. 64).

TEXAS GULF COAST: The Willow Slough-Seabreeze area achieved increased importance as a ½-mile extension was found to the latter field and either a major extension or a new field was found 1½ miles west of Willow Slough. A new sand is being developed at West Ganado, Jackson County. Distillate production at Angleton and gas production at Katy were extended (p. 61).

CALIFORNIA: Showings in the Buena Vista Hills test in Midway-Sunset below 13,000 ft. may open Rio Bravo or Vedder production in this district. The Inglewood extension may run into difficulties if it extends into Culver City where the noise may affect the moving-picture studios. The Ventura-Newhall district continues to show favorable developments as an aggressive drilling campaign gets under way (p. 46).

LOUISIANA GULF: Another pool in the Mississippi Delta was found in the marsh lands east of the river. The Pine Prairie flank discovery in the Sparta sand increases interest in the Sparta-Wilcox play. Edgerly may be added to the list of old domes with new deep production if a 6,900-ft. test holds up (p. 60).

COMPLETIONS IN ALL FIELDS . . .

(Week Ended April 26, 1941)

	Oil	Gas	Dry	Total	1941 total comp. to date	1940 total comp. to date
N. Y., Pa., and W. Va.	68	17	9	94	1,466	1,173
Ohio	12	13	14	39	464	285
Indiana	2	1	3	6	135	103
Kentucky	1	0	2	3	161	125
Illinois	54	0	16	70	902	1,035
Michigan	5	3	8	16	260	388
Kansas	21	1	10	32	521	454
Oklahoma	18	2	13	33	447	545
Nebraska	1	0	1	2	27	0
Missouri	0	0	0	0	1	0
Texas:						
North Central Texas	34	0	22	56	830	955
West Texas	36	0	7	43	596	648
Texas Panhandle	6	0	0	6	158	178
Eastern Texas	23	1	4	28	342	226
Texas Gulf Coast	18	1	6	25	321	415
Southwest Texas	24	4	20	48	512	716
Total Texas	141	6	59	206	2,759	3,138
North Louisiana	5	2	7	14	183	185
Louisiana Gulf Coast	20	1	5	26	258	271
Total Louisiana	25	3	12	40	441	456
Arkansas	3	0	2	5	56	68
Mississippi and Alabama	7	0	2	9	74	22
Montana	2	3	0	5	75	42
Wyoming	0	0	0	0	39	48
Colorado	0	0	0	0	10	6
New Mexico	5	0	0	5	90	208
California	16	0	5	21	331	318
Total United States	381	49	156	586	8,259	8,408
Total previous week	378	48	154	580		
Week ended Apr. 27, 1940	378	25	131	534		

KANSAS: Increases in Kansas' production, if continued, may outstrip the state's pipe-line capacity during the summer. Shaeffer and Greenvale record new producing horizons, while Ainsworth is extended to the northwest, bringing it closer to the Trapp pool (p. 56).

OKLAHOMA: Tecumseh Lake and Guthrie are providing plenty of interest as nearly a score of wells are in prospect. The Calvin sand has proved productive in the 10-year-old Fish pool (p. 59).

MICHIGAN: The Reed City gas field in Osceola County continues to provide good news as the state's oil production goes to new low levels (p. 47).

APPALACHIAN: New deep tests are under way in Southeast Ohio and in West Virginia. Pennsylvania's deep development is still centered on Chestnut Ridge (p. 67).

WEST TEXAS: A ¼-mile extension to the Todd pool opened a new sand at 5,880 ft. Several Ordovician wells are due for test, including what may be West Texas' first 10,000-ft. pool opener (p. 53).

NORTH TEXAS: After being abandoned, a well in Clay County seeped oil and gas through the plug and may prove a pool opener. The second well showed saturation at 3,980-88 ft. A show has been found in the Mississippian in the K.M.A. field northwest of the Ellenburger area (p. 57).

EAST TEXAS: The active wildcat campaign following the discovery of Hawkins is augmented by six new tests in the area. A wildcat southwest of Bazette may open a small Balcones fault-line Woodbine pool (p. 62).

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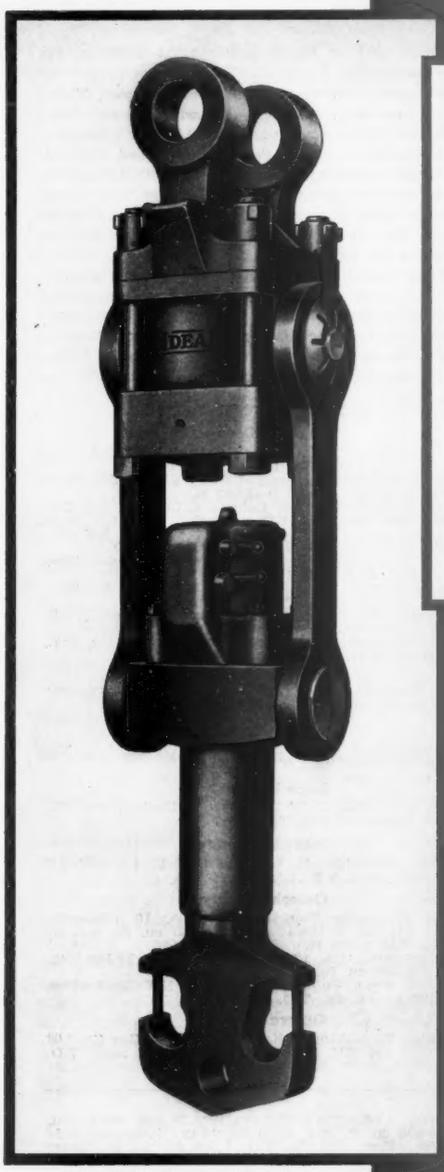

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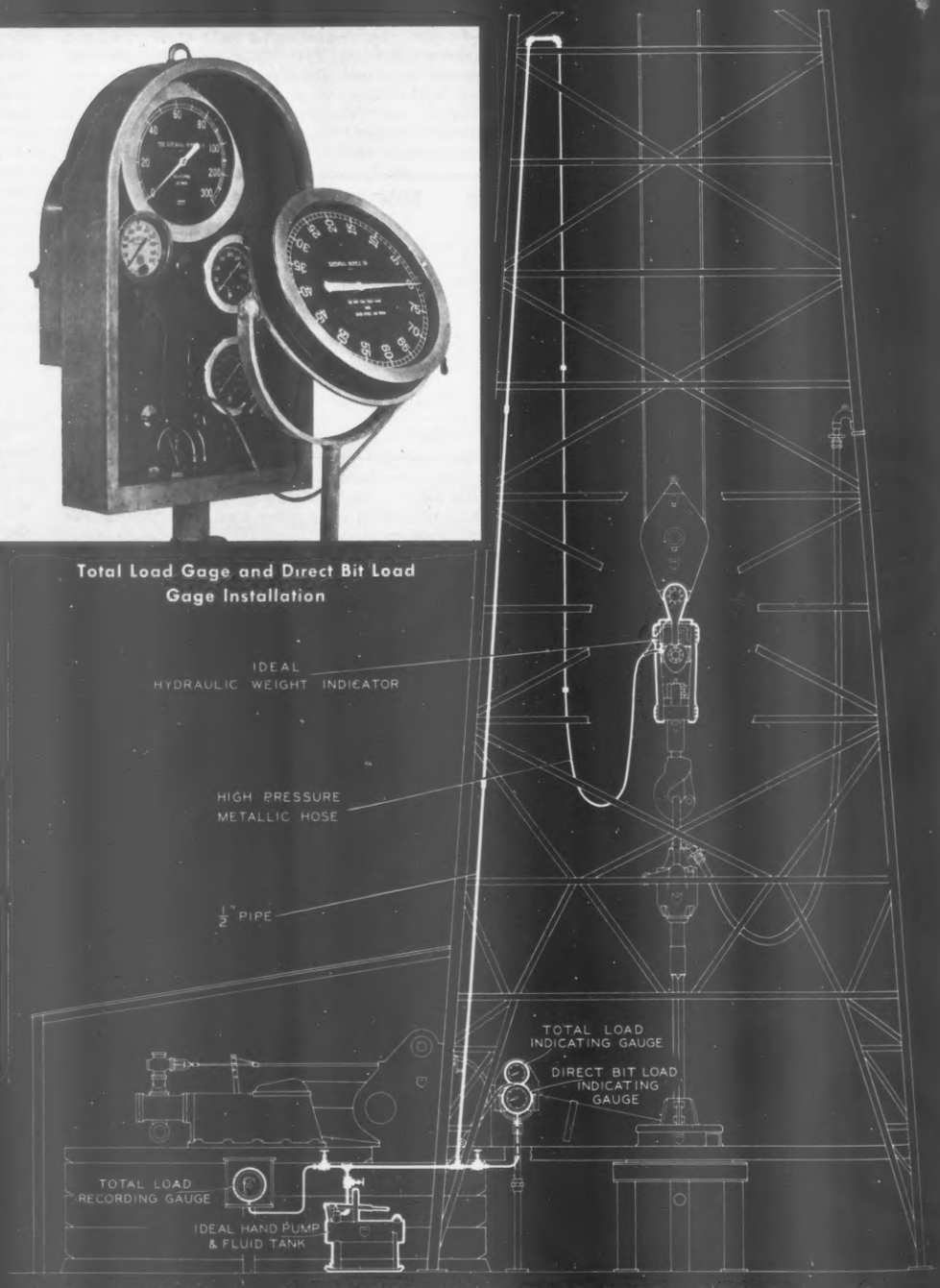

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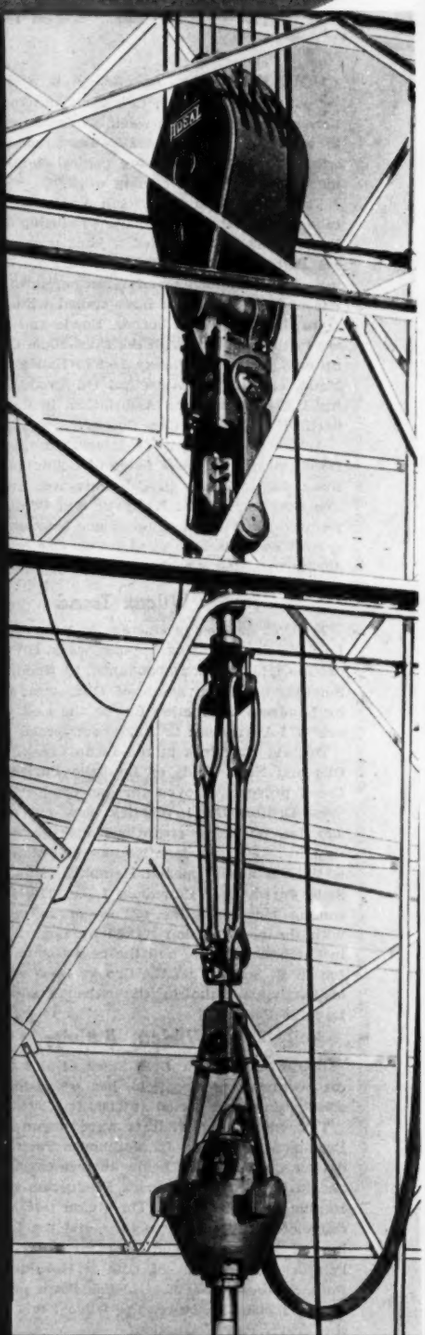

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Wilcox Play Leads Tri-State Wildcatting Activity

By
GEORGE WEBER

SHREVEPORT, La., Apr. 28.—New wildcats of interest began in North Louisiana and the East Texas border during the past week, to continue the upswing in exploration in the Ark-La-Tex area. Several other wildcat operations, nearing critical depths, will command interest in the coming week.

The Wilcox play in North Louisiana received another wildcat test as Louark Producing Co. and Phillips Petroleum Co. staked a joint operation, 1-B Tensas Delta, in south Catahoula Parish. To the northwest, in Natchitoches and Winn parishes, E. H. Demetrie and K. E. Merren have staked wildcats.

On the East Texas border, Bowie and Cass counties are in the spotlight with the Normandie Oil Co. rigging up on 1 Powell, a Paluxy test in Bowie Codunty near Maud, and British American Oil Producing Co. drilling 1 East Texas Iron Association, in the Bivins area, north of Rodessa in Cass County.

Arkansas operations of interest center around the Dorcheat and Stephens fields of Columbia County, and three deep wildcats in Columbia and Union counties. The Buckner field of Lafayette and Columbia counties received a north extension of one location, as its twenty-fifth well, Barham et al 1 Pelt was brought in producing from the Smackover lime.

Wilcox Trend

Failures defined production in two Wilcox fields of La Salle Parish during the past week. On the east edge of Olla, H. L. Hunt abandoned 10 Goodpine, and the Summerville field, south of Olla, was again defined by Landreth Production Co. on the east with the failure of 1-A Tremont to make commercial production.

Drilling continues in the Little Creek, Summerville, Olla and Nebo fields of La Salle Parish. The Trout Creek prospect, proven for gas production when Big West Drilling Co. 1 Whatley blew out several weeks ago, has no active operations and the wildcat is still shut in awaiting orders. No new operations are reported in the newly opened Hemphill field in South La Salle Parish near Catahoula Lake. The latter area is coming more into the picture of active exploration, with the new location staked by Louark and Phillips in Catahoula Parish, and the new test now rigging up for H. R. Scivally on the Crooks lease south and east of Catahoula Lake in the extreme southern tip of La Salle Parish.

Wildcat Activity

In De Soto Parish J. E. Stack et al 1 Cook, a wildcat northwest of Mansfield, has set casing at 2,890 ft. after a shutdown period at 3,000 ft.

Two interesting wildcats were begun in Northeast Louisiana this week. In Morehouse Parish Union Producing Co. is drilling below surface casing in 1 White and in Union Parish Louark Production Co. has begun rigging up on 1 Farley. The Union test is on the east flank of the Monroe structure, and the Louark test is located midway between the Monroe gas field and Lisbon. A third wildcat of note is Harold A. Wright 1 Rainach, located north of Lisbon Pettit production, but on the Lisbon structure. The wildcat will be drilled to the Travis Peak formation.

In Lincoln Parish, two deep tests are being closely watched. Big West Drilling Co. 1 Patton estate, located on the southeast edge of Pettit production at Lisbon, and about 2½ miles from J. D. Caruthers 1 Burgess-Simmons unit, a deep gas-condensate producer, is drilling below 7,713 ft. and approaching critical depth. It will explore the production possibilities in the Cotton Valley formation.

Herman Brown 1 Arkansas-Louisiana Gas Co., North Louisiana's deepest current wildcat, is below 9,795 ft. in the Cotton Valley formation. The test, located in the Simsboro area, has reported no shows.

NORTH LOUISIANA COMPLETIONS

Wildcat—Bossier Parish

R. L. Reese 1-A Bellevue Land Co., SW NE SW 27-20-11 T.D. 3,007 ft., salt water.

SUMMARY OF COMPLETIONS

North Louisiana

	No.	Bbl.	Footage
Oil wells: Caddo	5	78	7,918
Gas wells: Monroe	2	*6	4,364
Dry holes: Converse	1	.....	2,012
Olla	1	.....	4,021
Sugar Creek	1	.....	5,840
Summerville	1	.....	3,970
Zwolle	1	.....	3,560
Miscellaneous (wildcats)	2	.....	7,504
Total	14	78	39,189

Arkansas

Oil wells: Buckner	1	120	7,275
Troy	1	35	1,262
Urbana	1	50	2,979
Dry holes: Urbana	1	.....	2,957
Wildcats	1	.....	583
Total	5	205	15,056

East Texas Border

Oil wells: Smithland	1	312	2,384
Dry holes: Smithland	1	.....	2,345
Wildcats	1	.....	450
Total	3	312	5,179

*Million cu. ft.

Caddo—Caddo Parish

Davis & Hart 5-B Muslow ..... SW SW NE 32-21-15
Pumped 5 bbl. oil, 25 bbl. salt water, T.D. 1,532 ft., 7-in. casing 1,373 ft., 4,000 gal. acid.

Hawkins & Stewart 2 Ramsey ..... NE SE 32-21-15
Pumped 20 bbl., T.D. 1,553 ft., 4,000 gal. acid, 5-in. casing 1,373 ft.

Texas Co. 6 H. J. Herndon ..... SE SW NE 22-21-15
Pumped 65 bbl., 50 per cent salt water, T.D. 1,608 ft., 6⅝-in. casing 1,479 ft., 4,000 gal. acid.

Texas Co. 11 J. F. Herndon ..... NE SE SW 14-21-15
Pumped 20 bbl., 50 per cent salt water, T.D. 1,660 ft., 6⅝-in. casing 1,522 ft.

Sloan Wells 1 Fouche ..... NE SE SE 12-20-16
Pumped 10 bbl., T.D. 1,565 ft., 5-in. casing 1,400 ft., 3,000 gal. acid.

Sugar Creek—Claiborne Parish

Union Prod. Co. 2 Warren Brown, NW NE SE 36-20-6w T.D. 5,840 ft., dry.

Olla—La Salle Parish

H. L. Hunt 10 Goodpine ..... SE NE 18-10-3e T.D. 4,021 ft., dry.

Summerville—La Salle Parish

Landreth Prod. Co. 1-A Tremont ..... SW NW 24-9-2e T.D. 3,970 ft., dry.

Monroe—Ouachita Parish

Southern Carbon Co. 16 Fairbanks ..... NW SE 5-19-4e
3,000,000 cu. ft. gas, R.P. 300 lb., T.D. 2,167 ft., 6-in. casing 2,103 ft.

Converse—Sabine Parish

J. P. Burrows 1 De Soto Corp. .. SE NE NW 27-10-13 T.D. 2,012 ft., salt water.

Wildcat—Sabine Parish

Plummer & McDaniel 1 Phares .... NW NW SW 4-5-12 T.D. 4,497 ft., dry, tested 3,000,000 cu. ft. gas and much salt water, abandoned.

Zwolle—Sabine Parish

Sutton Zwolle Oil Co. 3 Sabine .... N½ SW NE 23-7-14 T.D. 2,560 ft., junked and abandoned.

Monroe—Union Parish

Interstate Nat. Gas Co. 106 fee ..... S½ S½ 28-20-3
3,000,000 cu. ft. gas, R.P. 950 lb., T.D. 2,197 ft., 6-in. casing 2,123 ft.

NORTH LOUISIANA DRILLING REPORT

Claiborne Parish

Harold A. Wright 1 Rainach ..... SW NE 16-22-5
Set 13⅜-in. casing 250 ft., drilling 2,160 ft.

De Soto Parish

J. E. Stack et al 1 Cook ..... NW NE 32-13-14
Set 7-in. casing 2,890 ft.

La Salle Parish

Delta Drlg. Co. 1 Hughes ..... NE NE SW 22-8-1e
Set 5½-in. casing 1,509 ft., old T.D. 4,092 ft.

M. L. Meredith 1 Grey ..... NE NE 36-8-2e
S.D. 50 ft.

Placid Oil Co. 3-A Tremont ..... SW NW 18-9-2e
Drilling 3,962 ft.

H. R. Scivally, Tr., 1 Nora D. Crooks ..... SW NE 12-6n-4e

Lincoln Parish

Big West Drlg. Co. 1 Patton estate, E½ W½ SE 7-20-4w
Drilling shale, 7,705 ft.

Herman Brown 1 Ark. La. Gas Co. .... SW NE 11-17-4
Drilling hard sand, 9,795 ft.

Morehouse Parish

Union Prod. Co. 1 E. M. White .....
3,200 ft. W, 2,400 ft. S, NE cor. irreg. sec. 37-20-6
10¾-in. casing 315 ft., drilling 753 ft.

Union Parish

Louark Prod. Co. 1 H. H. Farley et al, NE SW 10-20-1w
Rigging up.

Winn Parish

Nat Wissman 1 Quinn ..... irreg. sec. 38-9-6w
Coring 1,362 ft.

NEW WILDCAT LOCATIONS

Catahoula Parish

Louark Prod. Co. and Phillips Pet. Co. 1-B Tensas Delta Land Co. ..... SE NW 15-5n-5e

Natchitoches Parish

E. H. Demetrie 1 Winn ..... SE NW 25-10-10

Red River Parish

K. E. Merren 1 Nona Milla Lumber Co. .....
SW SW NE 28-3n-12w

ARKANSAS

Dorcheat, a Smackover lime field of Columbia County, shows continued increase in development. At present four rigs are active in the field, one of which is an east outpost test. Interest at Dorcheat is directed to the east, where considerable production is anticipated. This is enhanced by the drilling of McAlester Fuel Co. 1 Franks, a wildcat located almost 5 miles southeast of production at Dorcheat. The test was delayed by mechanical trouble when casing split at total depth of 2,283 ft. Operators junked the hole and skidded north 25 ft. and were last reported drilling the new hole below 1,950 ft.

Interest is again directed to the Stephens area of northern Columbia County and Southwest Ouachita County. There Fitzwater & McClerkin 1 C. C. Smart is bottomed in the Smart sand at 3,434 ft., casing has been run and operators are swabbing in an effort to bring in a producer. The deep sand was first shown possibly productive of oil in Crow Drilling Co. 1 Smart, which is still shut down after testing some oil from the Travis Peak horizon.

Field operations continue active at Urbana, El Dorado, Nick Springs and Smackover, Union County. South Arkansas, however, has continued relatively quiet during the past several months due to a lack of any major field under development, and a lapse in wildcatting. The prospects at Dorcheat, and success in any of the three deep wildcats drilling for the Smackover lime in Columbia and Union counties may serve to revive drilling in that area.

ARKANSAS COMPLETIONS

Wildcat—Clark County

Christman, Coker & Grieves 1 Sparkman .....
NW NE NE 11-11-20
T.D. 583 ft., dry.

Buckner—Lafayette County

Bradham et al 1 L. Pelt ..... SW NE 7-16-22
120 bbl., 7/64-in. choke, T.P. 35 lb., C.P. 700 lb., 5½-in. casing 7,273 ft., T.D. 7,275 ft., perf. 7,242-72 ft., 500 gal. acid, Smackover lime.

Troy—Nevada County

Berry Asphalt Co. 7 C. C. Fincher .... NE SE 10-14-20
Pumped 35 bbl., T.D. 1,262 ft., 7-in. casing 1,254 ft.

Urbana—Union County

Ark. Southern Oil Co. 3-A Simmons NW NE NW 15-18-13
T.D. 2,957 ft., salt water, deepened from 2,629 ft.

Marine Oil Co. 6 M. H. Simmons, NE NE NW 10-18-13
50 bbl., 6/64-in. choke, T.P. 875 lb., C.P. 1,025 lb., T.D. 2,979 ft., 7-in. casing 2,959 ft.

ARKANSAS DRILLING REPORT

Clark County

Coker, Grieves & Christman 1 Williams .....
NE NE NE 7-11-20
Drilling lime and shale 1,422 ft.

Columbia County

McAlester Fuel Co. 1 Franks ..... SE SE 16-18-21
Junked hole 2,283 ft., skidded 25 ft. north, spudded, set 13⅜-in. casing 118 ft., drilling 1,925 ft.

(Continued on Page 58)

By
STAFF CORRESPONDENT

Three New Pools Mark Fifth Anniversary of Illinois Play

MATTOON, Ill., Apr. 28.—Illinois last week celebrated its fifth year of current oil development. Present exploration was pioneered by the Bartelso Oil & Gas Co. when it successfully completed 1 Trame in Clinton County on April 20, 1936, but development did not reach boom proportions until the Pure Oil Co. brought in a gusher on the Travis farm in Clay County in May 1937, to open the Clay City pool. Since the completion of 1 Trame in 1936, more than 90 pools have been discovered in the southern part of Illinois.

As a sort of birthday observance operators have opened four new pools in the past 2 weeks and have recovered promising saturation in other new territory. The first of the new pools was opened 2 weeks ago in Shelby County when Hinkle & Sloan 1 Harrison, NE SE 12-10n-2e, was completed as a light producer in the Aux Vases sand, making 76 bbl. of oil and 19 bbl. of water in a 48-hour test.

WHITE COUNTY.—Cherry & Kidd opened a new area to exploration in White County last week by completing 1 Karch as a light pumper in the Aux Vases sand at 2,841 ft. The 1 Karch, SW NW NE 24-6s-10e, 11 miles southeast of Carmi, recovered saturation in the Palestine at 1,998 ft. and in the Cypress at 2,555 ft. However, the well flowed by heads from the Aux Vases and was completed in that formation. The Palestine and Cypress pays have not yet been tested but special alloy casing has been set opposite them in anticipation of future tests.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Benton	6	2,441	12,855
East Calvin	5	679	13,938
Hoodville	9	1,611	27,603
Mount Carmel	6	549	11,776
North New Harmony	5	942	13,949
West Liberty	2	752	5,630
Other pools	21	1,762	55,192
Dry holes: Fields*	7	.....	17,994
Wildcats	9	.....	19,076
Total	70	.....	178,013
Recompletions	9	731	.....

*North Boos 1 ,Dundas 1, Allendale 1, Aden 1, Springerton 1, South New Harmony 1, Billett 1.

Wildcat Makes Large Producer

Last week's pool openers were led by one of the largest wells completed on the east side of the basin in many months. Hohn Sanders 1 Leslie Hubble, SE 30-8n-2e, a wildcat in Zif Township, Wayne County, early last week was reported flowing naturally from the McClosky at the rate of about 100 bbl. an hour. This well is estimated as good for 2,500 bbl. a day. The 1 Hubble is producing from 16 ft. of saturation and is near three producing areas, the Zif, Bruner and Macklin pools.

Pure 1 Andy Hubble, an east offset to the discovery, was drilling below 2,300 ft. last week and both Pure and Sanders were planning immediate additional tests. Sanders 2 Hubble was due to be spudded early last week.

WABASH COUNTY.—Illinois' most recently discovered pool was opened last week by Hays & Brown 1 Seiler, 30-1s-12w, 1 mile southwest of Mount Carmel in Wabash County. Production of 112 bbl. a day was obtained from the Tar Springs sand at 1,784 ft.

Benton Pool Continues to Grow

Despite leasing troubles which are greatly retarding its development, the new Benton pool of Franklin County continues to grow and some of the largest producers completed in the southern part of the state are being obtained in this pool. W. O. Morgan 2 Minier, NE NW NE 36-6s-2e, offset to 1 Minier which extended the pool 1½ miles to the south, was reported flowing between 1,300 and 1,400 bbl. of oil a day last week. Production is from the McClosky. Morgan 3 Minier, another offset, was drilling below 1,550 ft. at the end of the week. The 1 Minier, which came in with a flow of 40 bbl. an hour, was the largest well ever obtained in Franklin County previous to the completion of 2 Minier.

The new Benton pool is expected by many operators to rival the Hoodville pool of Hamilton County and some observers are viewing it as the next Salem pool of Illinois.

ILLINOIS COMPLETIONS

Clay County

Iola: A. R. Madden 1 Ging, SE SE NE 17-5n-5e, pumped 100 bbl. oil and 5 bbl. water, Aux Vases 2,373-89 ft., T.D. 2,389 ft.

Clinton County

Bartelso: P. Mosebach 1 Schlarmann, NE NW NW 9-1n-3w, pumped 66 bbl., 3,000 gal. acid, 60-qt. shot 2,408-53 ft., Devonian 2,402 ft., T.D. 4,213 ft., P.B. 2,450 ft., drilled out to 2,475 ft.
Wildcat: Strawser et al 1 Ben Winkler, SE NW SW 25-1n-4w, dry, T.D. 1,140 ft.

Edwards County

Bone Gap: Tide Water 1 Gawthorp, NE NE NE 13-1s-10e, pumped 176 bbl. oil and 18 bbl. water, squeezed 3,266-72 ft., 3,274-78 ft., drilled out to 3,275 ft., perf. 3,267-73 ft., old well worked over, T.D. 3,325 ft.
Albion: Coleman Drlg. 1 Huber, NE NE NW 18-2s-11e, pumped 22 bbl., 60-qt. shot 3,028-51 ft., Aux Vases 3,039 ft., T.D. 3,106 ft., P.B. 3,055 ft.

Fayette County

Louden: Carter 2 Miller, SW NW SE 1-8n-3e, swabbed 72 bbl., 15-qt. shot 1,520-25 ft., Cypress sand 1,513 ft., T.D. 1,525 ft.

Franklin County

Benton: E. S. Adkins 4 Orient, NW SW SE 24-6s-2e, pumped 363 bbl., 25-qt. shot 2,125-38 ft., Tar Springs 2,103 ft., T.D. 2,138 ft.
Wegener 4 C. W. & F. Coal Co., SE SW SW 24-6s-2e, pumped 425 bbl., 25-qt. shot 2,105-28 ft., Tar Springs 2,084 ft., T.D. 2,128 ft.
E. S. Adkins 2 McKemie, SW NE NE 25-6s-2e, pumped 214 bbl., 25-qt. shot 2,142-57 ft., Tar Springs 2,135 ft., T.D. 2,157 ft.
E. S. Adkins 2 Simpson, NW NE NW 25-6s-2e, pumped 218 bbl. in 14 hr., 25-qt. shot 2,094-2,116 ft., Tar Springs 2,076 ft., T.D. 2,116 ft.
Shell 4 W. E. Doty, SW NW NE 25-6s-2e, pumped 309 bbl., 15-qt. shot 2,143-53 ft., Tar Springs 2,109 ft., T.D. 2,153 ft.
W. O. Morgan 1 J. P. Miner, NW NW NE 36-6s-2e, flowed 912 bbl., 60-qt. shot 2,143-63 ft., Tar Springs 2,116 ft., T.D. 2,163 ft.

Hamilton County

Dahlgren: Sinclair 2 Gage, NW SW NE 34-3s-5e, pumped 142 bbl., 5,000 gal. acid, McClosky 3,323-36 ft., T.D. 3,350 ft.
Hoodville: Texas 1 Ada Edwards, NW NW SW 2-6s-6e, pumped 164 bbl., 60-qt. shot 2,969-72 ft., Benoist 2,961-81 ft., T.D. 3,061 ft.
Ohio 8 O. Matheny, SW SW SE 3-6s-6e, pumped 233 bbl., Benoist 2,962 ft., Aux Vases 3,075-77 ft., T.D. 3,077 ft.
Ohio 4 A. B. Moore, SW NE SW 3-6s-6e, swabbed 142 bbl. oil and 4 bbl. water from Benoist and Aux Vases, Benoist 2,952-72 ft., Aux Vases 3,053-63 ft., T.D. 3,063 ft.
Texas 2 H. A. Carey, SW SE NW 3-6s-6e, pumped 292 bbl. from Benoist and Aux Vases, 10-qt. shot 2,967-74 ft., Benoist 2,959 ft., Aux Vases 3,056 ft., T.D. 3,063 ft.
Texas 2 Carey-Hood Comm., NW SE NW 3-6s-6e, pumped 119 bbl. from Benoist and Aux Vases, 10-qt. shot 2,966-73 ft., Benoist 2,956-78 ft., Aux Vases 3,050 ft., T.D. 3,069 ft.
Texas 10 G. G. Edwards, SE SE NE 3-6s-6e, pumped 125 bbl. from Benoist and Aux Vases, 7-qt. shot 2,959-66 ft., Benoist 2,949-68 ft., Aux Vases 3,046-56 ft., T.D. 3,056 ft.
Texas 10 C. W. Hood, SE NE NW 3-6s-6e, pumped 157 bbl. from Benoist and Aux Vases, 13-qt. shot 2,943-56 ft., Benoist 2,936-59 ft., Aux Vases 3,032 ft., T.D. 3,038 ft.
Texas 11 C. W. Hood, SW NE NW 3-6s-6e, pumped 187 bbl. from Benoist and Aux Vases, 10-qt. shot 2,961-68 ft., Benoist 2,947-70 ft., Aux Vases 3,037-53 ft., T.D. 3,053 ft.
Ohio 1 Bethel, NE NE NW 10-6s-6e, pumped 192 bbl. oil and 16 bbl. water from Benoist and Aux Vases, 10-qt. shot 2,963-71 ft., Benoist 2,953-73 ft., Aux Vases 3,052 ft., T.D. 3,073 ft.
Texas 2 C. A. Flint, SE SW SW 3-6s-6e, location abandoned.
Texas 1 E. Jackson, SE NW SW 3-6s-6e, location abandoned.
Whisenant & Trenchard 1 Moore, SE SE NW 10-6s-6e, location abandoned.
Dale: Cameron Bros. 1 Hern, NE SE SW 7-6s-7e, pumped 50 bbl. oil and slight show water, 10-qt. shot 2,922-32 ft., Benoist 2,896 ft., pay 2,905-31 ft., T.D. 3,039 ft., P.B. 2,943 ft.
Wildcat: E. S. Adkins 1 Federal Chem. & Coke Co., NW NW SE 17-7s-6e, dry, T.D. 3,266 ft., P.B. 2,657 ft.

Jasper County

West Liberty: Pure 1 Bolander-A, W½ NE NW 4-5n-10e, flowed 563 bbl., 5,000 gal. acid, McClosky 2,782-90 ft., 2,792-95 ft., 2,809-12 ft., T.D. 2,825 ft.
Pure 1 Maginn-A, W½ NE SE 5-5n-10e, pumped and flowed 189 bbl. through casing, 2,000 gal. acid, 5,000 gal. reacid, McClosky 2,760-66 ft., 2,782-87 ft., T.D. 2,805 ft.
North Boos: Pure 1 Anton Eckle-A, W½ SW SW 9-6n-10e, dry, T.D. 2,870 ft.
Pure 2 May, W½ NE NE 17-6n-10e, pumped 214 bbl., 5,000 gal. acid, McClosky 2,786-92 ft., T.D. 2,825 ft.

Lawrence County

Billett: Robbins 1 Ackerman, 1,050 ft. N line, 900 ft. W line 30-3n-11O, dry, T.D. 90 ft.

Marion County

Salem: Magnolia 35 Shanafelt, NW SW SE 29-2n-2e, flowed 49 bbl., Trenton 4,507 ft., pay 4,544-4,609 ft., old well drilled deeper, T.D. 4,617 ft.
Magnolia 18 J. R. Young, NE SW NE 29-2n-2e, flowed 78 bbl., 160-qt. shot, pay 4,545-46 ft., Trenton 4,498 ft., old well deepened from 3,454-4,625 ft.
McBride 18 Lee, 360 ft. N line, 1,000 ft. E line SE 29-2n-2e, flowed 58 bbl., 20-qt. shot 4,598-4,612 ft., Trenton 4,504 ft., pay 4,598-4,612 ft., old well drilled deeper, T.D. 4,625 ft.
Texas 13 Shanafelt, W½ NE NE 29-2n-2e, flowed 73 bbl., natural, Trenton 4,501 ft., old well drilled deeper, T.D. 4,642 ft.

Richland County

Dundas: Pure 3 R. Grove, W½ SE NE 31-5n-10e, flowed 435 bbl., 5,000 gal. acid, Ste. Genevieve 2,787 ft., T.D. 2,860 ft.
Pure 3 Kermickle-A, E½ NW NW 5-4n-10e, dry, T.D. 2,890 ft., P.B. 2,817 ft.
Wildcat: Pure 1 Borah-A, NE NW NW 12-2n-9e, dry, T.D. 3,185 ft.

Shelby County

Wildcat: A. Ginter 1 E. Fox, NW SE NW 34-10n-4e, dry, T.D. 160 ft.

Wabash County

Allendale: Hays Drlg. 2 New York Central R. R., NE SE SE NW 1-1n-12w, pumped 10 bbl. oil and 5 bbl. water, 10-qt. shot 2,029-38 ft., Benoist 2,026-36 ft., T.D. 3,038 ft.
Harris & Cohen 9 C. Smith, SW SE NW SE 9-1n-12w, pumped 140 bbl., 60-qt. shot 1,975-2,000 ft., Cypress sand 1,965 ft., pay 1,972-2,002 ft., T.D. 2,007 ft.
Parker Drlg. 1 Sturgeon, SW SE SE 12-1n-12w, dry, T.D. 2,286 ft., P.B. 1,424 ft.
Mount Carmel: Shell 2 S. S. Trapp, SE SW NW 17-1s-12w, pumped 86 bbl., 10-qt. shot 2,075-82 ft., Cypress sand 2,065 ft., T.D. 2,082 ft.
Stroube et al 1 C. Gilliem, NW NW NW SW 17-1s-12w, pumped 103 bbl. oil and 90 bbl. water, Biehl 1,567-74 ft., T.D. 1,574 ft.
Babler & Hull 2 Hein, SE SW SE NE 18-1s-12w, pumped 105 bbl., 40-qt. shot 2,072-84 ft., Cypress sand 2,068-84 ft., T.D. 2,084 ft.
Ill.-Mid-Cont. 3 Bancroft School, SW NW NE 20-1s-12w, pumped 40 bbl., 30-qt. shot 1,535-52 ft., Biehl 1,533 ft., T.D. 1,552 ft.
Menepee 1 Seals, SW NE NE NE 20-1s-12w, pumped 155 bbl., 15-qt. shot 2,038-44 ft., Cypress sand 2,029-44 ft., T.D. 2,044 ft.
E. O. Olds 1 White, E½ NE SE NE 20-1s-12w, pumped 60 bbl. oil and 30 bbl. water, perf. 2,398-2,408 ft., McClosky 2,398 ft., 2,924-31 ft., T.D. 2,440 ft.
Wildcat: Ill.-Mid-Cont. 1 J. Keiffer, SW SW NE 32-1s-12w, dry, St. Louis 2,498 ft., T.D. 2,507 ft.

Washington County

Irvington: Kingwood 3 Brink, SW SE SE 15-1s-1w, pumped 27 bbl. oil and 4 bbl. water, 6-qt. shot 1,530-36 ft., Benoist 1,529 ft., T.D. 1,536 ft.
Magnolia 9 O. Rahn, NW NE NE 22-1s-1w, pumped 134 bbl., 9-qt. shot 1,533-36 ft., Benoist 1,530 ft., T.D. 1,536 ft.
Dubois: Ruwaldt 4 J. Bender, SE NW NW 20-3s-1w, pumped 38 bbl. from Benoist sand, T.D. 1,388 ft.
Wildcat: H. Hubbard 1 Harre, SW SW SW 1-3s-4w, dry, Menard 725 ft., Waltersburg 770 ft., Vienna 818 ft., Tar Springs 830 ft., Glen Dean 902 ft., Hardinsburg 946 ft., Golconda 988 ft., Cypress 1,090 ft., Cypress sand 1,118 ft., Benoist 1,222 ft., Benoist sand 1,248 ft., Renault 1,286 ft., Aux Vases 1,313 ft., Fredonia 1,348 ft., T.D. 1,357 ft.

Wayne County

Aden: Texas 7 J. G. Boggs, S½ SW SW 9-3s-7e, dry, T.D. 3,412 ft.
West Enterprise: Pure 1 A. E. Michaels-A, E½ SE NE 35-2n-7e, pumped 35 bbl., 5,000 gal. acid, Fredonia 3,033 ft., pay 3,037-40 ft., 3,052-55 ft., T.D. 3,075 ft.
Pure 5 H. G. Garrison, E½ NE SW 36-2n-7e, pumped 45 bbl., 5,000 gal. acid, Fredonia 3,010 ft., pay 3,014-18 ft., 3,053-56 ft., T.D. 3,085 ft.

White County

East Calvin: Pure 2 Potter, NW NW SW 9-4s-14w, pumped 188 bbl. from Benoist and Aux Vases,

35-qt. shot 2,810-35 ft., old well deepened from 2,698-2,835 ft.

P. Miller 4-B-1 Ford heirs, SW NW NW 21-4s-14w, pumped 50 bbl., 50-qt. shot 2,227-38 ft., Tar Springs 2,217 ft., T.D. 2,238 ft.

Stroube & Stroube 3 Boltinghouse, SW SE NW 16-4s-14w, pumped 95 bbl., 35-qt. shot 2,705-30 ft., Paint Creek sand 2,693-2,715 ft., T.D. 2,973 ft., P.B. 2,737 ft.

Pure 13 Potter, SE NW NW 9-4s-14w, pumped 149 bbl., 30-qt. shot 2,695-2,705 ft., 55-qt. shot 2,820-40 ft., Paint Creek sand 2,688 ft., Aux Vases 2,816 ft., T.D. 2,845 ft.

Cherry & Kidd 2 Calvin, NW SW NE 8-4s-14w, pumped 78 bbl., 80-qt. shot 2,792-2,822 ft., Aux Vases sand 2,792 ft., old well worked over, T.D. 2,822 ft.

Tide Water 2 Evans, NE SE NE 5-4s-14w, pumped 15 bbl., 20-qt. shot 2,654-84 ft., drilled removable pipe in Benoist 2,654-84 ft., perf. Aux Vases 2,794-2,817 ft., old well worked over, T.D. 2,873 ft.

W. O. Schuler et al 1 E. P. Smith, SE SE SW 5-4s-14w, flowed 265 bbl., 30-qt. shot 2,860-75 ft Aux Vases 2,851-75 ft., T.D. 2,875 ft.

French & Lavender 2 Hon, SW NE SE 32-3s-14w, pumped 120 bbl., 50-qt. shot 2,714-30 ft., 5-qt. shot 2,717-20 ft., Paint Creek 2,722 ft., T.D. 3,007 ft., P.B. 2,735 ft.

North New Harmony: Tide Water 17 Dennis, NE NE NE 33-4s-14w, flowed 310 bbl. from Cypress and Benoist, 20-qt. shot 2,712-30 ft., Cypress sand 2,552-26 ft., Benoist 2,688 ft., T.D. 2,732 ft.

Sun 1 E. B. Henning, SE SW NW 33-4s-14w, pumped 147 bbl., 110-qt. shot 2,700-24 ft., Benoist pay 2,705-24 ft., T.D. 2,724 ft.

Superior 7 H. M. Ford, NW SE SW 28-4s-14w, flowed 250 bbl., 140-qt. shot 2,826-65 ft., Aux Vases 2,825-58 ft., T.D. 2,923 ft.

Superior 5 H. M. Ford, SW NE SE 28-4s-14w, pumped 60 bbl., 100-qt. shot 2,818-44 ft., Aux Vases 2,818-45 ft., T.D. 2,845 ft.

Superior 3 E. M. Fitton-B, SE SE SE 28-4s-14w, pumped 175 bbl., 120-qt. shot 2,696-2,725 ft., Benoist 2,685 ft., T.D. 2,725 ft.

New Haven: Hiawatha 3 Stinson, SE SE NW 19-7s-11e, pumped 50 bbl. oil and 2 bbl. water, 10-qt. shot 2,246-55 ft., Hardinsburg sand 2,246 ft., T.D. 2,255 ft.

Hiawatha 2 Vail, NE NW SE 19-7s-11e, pumped 50 bbl. oil and 7 bbl. water, natural, Cypress 2,451 ft., Hardinsburg 2,203 ft., T.D. 2,459 ft.

Springerton: Texas 8 A. J. Poorman, SE SE NW 32-3s-8e, pumped 37 bbl. oil and 149 bbl. water, 1,000 gal. acid, McClosky 3,390-96 ft., T.D. 3,396 ft.

Yingling 1 McIntosh, SE NW NW 31-3s-8e, dry, Glen Dean 2,616 ft., Golconda 2,762 ft., Barlow 2,880 ft., Renault 3,137 ft., Aux Vases 3,213 ft., Aux Vases sand 3,224 ft., Ste. Genevieve 3,276 ft., McClosky 3,366 ft., T.D. 3,368 ft., P.B. 3,254 ft.

Mill Shoals: New Penn. Dev. 3 McKeyes, SW NW SE 19-3s-8e, pumped 50 bbl., 50-qt. shot 3,210-35 ft., Aux Vases sand 3,204-35 ft., T.D. 3,245 ft.

Centerville: Sun 2 Brown, S½ SW NE 2-4s-9e, pumped 25 bbl. oil and 10 bbl. water, natural, perf. 3,329-31 ft., pay 3,332-37 ft., T.D. 3,408 ft.

Phillipstown: Phillips Pet. 3 Garr, SW NW SW 36-4s-10e, pumped 20 bbl., 30-qt. shot 1,997-2,005 ft., Degonia sand 1,996-2,002 ft., T.D. 2,007 ft.

Storms: Blackstock 7 Storms, SE NE NE 23-6s-9e, pumped 18 bbl. oil and 45 bbl. water, Vienna 2,286 ft., old well deepened from 2,265-2,327 ft.

South New Harmony: McBride 1 H. R. Golden, NE NW SE 29-5s-14w, dry, Palestine 2,152 ft., Menard 2,204 ft., Waltersburg 2,287 ft., Waltersburg sand 2,339-73 ft., Tar Springs 2,382 ft., Glen Dean 2,432 ft., Golconda 2,494 ft., Cypress 2,640 ft., Cypress sand 2,648-57 ft., 2,667-80 ft., Benoist 2,796 ft., Renault 2,860 ft., Aux Vases 2,919 ft., Aux Vases sand 2,921 ft., Ste. Genevieve 2,939 ft., T.D. 3,078 ft., P.B. 2,939 ft.

Wildcat: Fortner et al 1 Williams, SW SW NW 27-3s-10e, location abandoned.

L. B. Jackson 1 Parker, SW NW NW 35-5s-10e, dry, Golconda 2,577 ft., Barlow 2,694-2,700 ft., Cypress sand 2,714 ft., Benoist 2,879 ft., Renault 2,927 ft., Aux Vases 2,991 ft., Ste. Genevieve 3,025 ft., McClosky 3,063-72 ft., T.D. 3,174 ft.

Williamson County

Wildcat: Sun 1 Old Ben Coal, NE NW NW 13-8s-2e, dry, Fredonia 2,702 ft., McClosky 2,714 ft., T.D. 2,780 ft.

Union Mining 1 Henderson, SW SW NW 10-9s-2e, dry, T.D. 1,507 ft.

ILLINOIS DRILLING REPORT

Adams County

R. Hussong 1 fee ..... SW NE SW NW 21-1s-6w
First report, drilling 150 ft.

C. Schachtsick 1 J. Richart ..... NE SW NW 12-2s-8w
Drilling 800 ft.

Bond County

Regent Oil 1 R. N. Harwood .... SW SW NE 6-6n-3w
Set 8-in. 432 ft., drilling 520 ft.

Bureau County

F. E. Webb 2 Abrahams ..... NE NE NE 24-18n-8e
Set 4-in. 445 ft., squeezed, drilled plug, tested water, S.D. 450 ft.

Clark County

Sherritt et al 1 Jeffers ..... SE NE SE 31-11n-13w
Slight show oil in top of Carper at 1,600 ft., S.D. 1,600 ft.

Clinton County

Algona 1 Marshall ..... SE SE SW 12-1n-1w
Drilling 2,989 ft.

B. E. Martin 1 C. Heinzman .... SE SE SE 4-2n-1w
Set 6-in. 1,230 ft., S.D. 1,245 ft.

Hughes 2 Holman ..... NE SW SE 10-2n-1w
S.D. 1,310 ft.

Crawford County

J. Steele 1 M. S. Davis .....NW SW NE 23-7n-13w
Set 8-in. 1,165 ft., McClosky 1,410 ft., H.F.W. and S.D. 1,423 ft.

Du Page County

I. C. R. Synd. 1 Bartlett Village .SE NW NW 2-40n-9e
Set 8-in. 118 ft., 6-in. 217 ft., S.D. 285 ft.

Edgar County

Levy et al 1 Cockroft .....SW SE SE 11-12n-11w
Set 8-in. 945 ft., Rosiclare 1,010 ft., Fredonia 1,025 ft., St. Louis 1,045 ft., drilling 1,180 ft.

Edwards County

Sinclair 1 Gawthorp ..... NE SE NE 16-1s-14w
First report, rigging up rotary tools.

R. B. Martin 1 Lester ..... W½ SW SW 19-2s-10e
Menard 2,450 ft., Waltersburg 2,570-88 ft., Vienna 2,588 ft., Tar Springs 2,603 ft., Glen Dean 2,712 ft., Hardinsburg 2,750 ft., Golconda 2,843 ft., Barlow 2,945 ft., Cypress 2,955 ft., Cypress sand 2,955-64 ft., 2,977-92 ft., Paint Creek 3,091 ft., Benoist 3,115 ft., drilling 3,140 ft.

Effingham County

Lynch & Jansen 1 J. Burk ..... W½ SE NW 27-6n-5e
S.D. 1,750 ft.

Ford County

Nelson et al 1 Erp ..... SW NW SE 19-24n-7e
Drilling 2,863 ft.

Franklin County

Yingling et al 1 Thurmond ..... W½ NE SE 16-5s-4e
First report, machinery on ground.

E. S. Adkins 1-C Orient ..... SW SW SW 36-6s-2e
First report, base Pennsylvanian 1,703 ft., Clore 1,772 ft., Palestine 1,788 ft., drilling 1,861 ft.

Bay Oil 1 Franklin County Coal....SW SW NE 8-6s-3e
Kincaid 1,755 ft., Degonia 1,828 ft., Clore 1,905 ft., Menard 2,040 t., Tar Springs 2,233-45 ft., Glen Dean 2,298 ft., Hardinsburg 2,345 ft., Golconda 2,413 ft., drilling 2,840 ft.

Myers Drlg. 1 Rice ..... N½ NE NE SE 26-6s-2e
Drilling 1,907 ft.

Adkins 1 Old Ben Coal H ..... SE NE NW 29-6s-2e
T.D. 110 ft., recementing surface casing.

Gallatin County

Fitzgerald 1 Doherty.....W½ W½ NW 24-8s-9e
S.D. 1,955 ft.

Hamilton County

E. S. Adkins 2 Federal Chem. & Coke Co. ..... NE NE SE 17-7s-6e
First report, rigging up rotary.

Youngblood 1 Johnson ..... SE NW NW 27-6s-6e
Kincaid 1,866 ft., Menard 2,228 ft., Vienna 2,375 ft., Tar Springs 2,385 ft., Tar Springs sand 2,448 ft., drilling 2,482 ft.

Texas 1 K. Edwards ..... NW NE NW 11-6s-6e
Perf. 2,948-60 ft., swabbed 1 bbl. oil and ¼ bbl. water an hr., drilled plug on Aux Vases, swabbed 42 bbl. oil and slight show water, testing.

Henry County

O. Behrens 1 Patton..... SE SE SW 1-17n-3e
First report, Trenton 703 ft., drilling 755 ft.

Jasper County

Pure 1 N. Grove ..... E½ NW NE 16-5n-10e
Glen Dean 2,326 ft., Barlow 2,466 ft., drilling 2,506 ft.

(Continued on Page 58)

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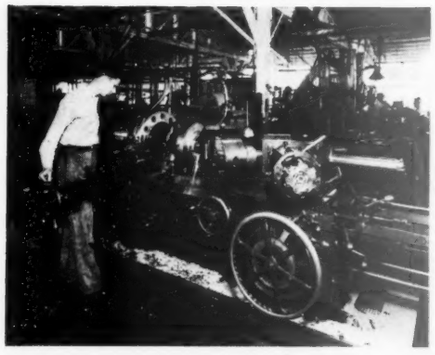

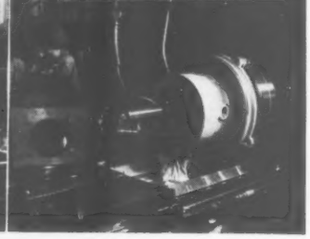

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Todd Extension, Ordovician Tests Share Spotlight

By R. MARNE SANFORD

MIDLAND, Tex., Apr. 28.—Testing is scheduled for a prospective deep discovery below the 10,000-ft. level and another at the 7,000-ft. level. Also expected to be a closely watched test is a new 1¼-mile outpost staked to the Todd deep field in Crockett County.

North of the Todd deep discovery well in north-central Crockett County, Amerada Petroleum Corp. has staked location for 2 J. S. Todd, NE SE Section 25, Block WX, G.C.&S.F. Survey. Amerada's first well in the field, a ¼-mile extension, was drilled to a total depth of 6,074 ft. and plugged back to 5,880 ft. to open the second pay level for the field with a flow of 538 bbl. in 13 hours and 35 minutes. The discovery well, drilled by Continental Oil Co. about a year ago, was completed at the 5,700-ft level in a crinoidal lime of the Strawn series (Pennsylvanian).

SHIPLEY DEEP.—Plug was scheduled to be drilled early this week in a second Silurian lime producer in the Shipley deep field in Ward County. It is Gulf 6 Wristen, Section 18, Block 5, H.&T.C. Survey, ¼-mile east offset to the company's 5 Wristen which opened the field late last year. The 5½-in. casing has been set in the new well at 6,945 ft. with the reported top of the Silurian lime at 7,022 ft. and total depth 7,080 ft. The extent of the shows found in the well has not been determined.

10,000-FT. AREA.—Eastern Crane County's prospective deep discovery well at the 10,000-ft. level is due to drill plug in 7-in. casing early this week. It is Gulf 1-F University, 990 ft. from the south and east lines of Section 22, Block 31, University Survey. The wildcat, third deepest drilled in West Texas, is bottomed at 10,658 ft., corrected depth. It is credited with slight stains of oil in cores from the upper section of the Ellenburger lime, the shows being in about the last 30 ft. of hole.

Abell Field Activity Increases

The deep Abell field of northern Pecos County, which produces from the Simpson (Upper Ordovician) lime, has about eight active tests in the field at the present time and prospects were seen at the close of the past week for the field's sixth producing well. Magnolia Petroleum Co. reported a top of 4,755 ft. for the Simpson section in its 1 Crockett, Section 4½, Block 3, H.&T.C. Survey, ½ mile north of the discovery well for the field. It was cored from 5,286 to 5,300 ft. with a recovery of 6 ft. of which the top 5½ ft. were lime and shale with the bottom 6 in. being oil sand. The 7-in. casing was cemented at 5,297 ft. and the well will be drilled in this week.

Another test in the field to top the Simpson section is Magnolia 1-B Markey, Section 4½, Block 3, H.&T.C. Survey, northwest of the field's discovery well. It topped the section at 4,834 ft., datum point of minus 2,440 ft., placing it below the discovery well and the same firm's 1 Markey, a recently completed ½-mile northwest extension well. No. 1-B Markey is drilling below 4,870 ft.

Stanolind 1 Conry-Davis, Section 31, Block 9, H.&G.N. Survey, 4 miles east of the field, logged a show of oil from 3,760 to 3,790 ft. in hard Permian lime. The well was preparing to core the section as the week closed.

Between this east outpost and the field proper, Sinclair Prairie 1 Grove, Section 26, Block 9, H.&G.N. Survey, was drilling below 3,620 ft.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hr. gages based on last 3 hr. of 6-hr. gage)

Crane County

Tubb: Humble 52 Tubb, 1,355 bbl., open tubing, 4,000 gal. acid, 4,260-4,420 ft.

Crockett County

Wildcat: George T. Morris 1 Hoover, SW SE Sec. 99. Blk. 1, H.&G.N. Sur., dry at 1,503 ft.

Ector County

Johnson: Atlantic Ref. 1-L Johnson, 193 bbl., open tubing, 520-qt. shot, 4,100-4,230 ft.
Continental 8 Johnson, 369 bbl., open tubing, 520-qt. shot, 4,150-4,260 ft.

SUMMARY OF COMPLETIONS

Northern West Texas

	No.	Bbl.	Footage
Oil wells: Slaughter	11	10,111	55,025
Seminole	2	1,362	10,555
Wasson	7	5,856	36,279
Sharon	2	334	4,865
Cedar Lake	1	640	4,926
Total	23		111,650

Southern West Texas

Oil wells: Johnson	4	1,390	16,892
North Cowden	2	643	8,785
Estes	2	753	5,423
Other fields	5	4,059	16,091
Dry holes: Fields	4		9,954
Wildcats	3		6,103
Total	20		63,248

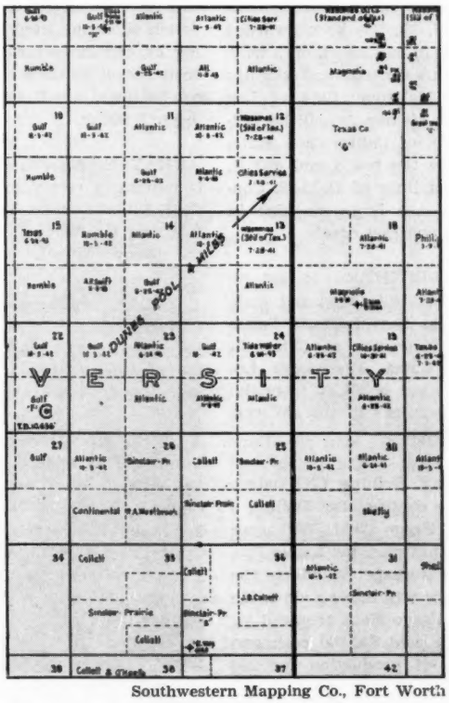
Schermerhorn Oil 13-B Johnson, 606 bbl., open tubing, 730-qt. shot, 4,018-4,182 ft.
Stanolind 21-A Johnson, 222 bbl., open casing, 260-qt. shot, 4,080-4,155 ft., P.B. from 4,220 ft.
Foster: Kewanee Oil & Gas 2 Foster, 1,298 bbl., open tubing, 960-qt. shot, 3,885-4,130 ft.
North Cowden: Carl B. King 3-B Holt, 579 bbl., open tubing, 210-qt. shot, 4,338-85 ft.
Stanolind 2-B Smith, 64 bbl., ¾-in. choke, 433-qt. shot, 4,240-4,400 ft.
Jordan: Snowden & McSweeney 1 Bond-Harrison, top anhydrite 1,150 ft., salt 1,242 ft., Yates 2,255 ft., dry at 3,685 ft.

Irion County

Wildcat: U. Hampton 1 Nutt, dry but not plugged at 600 ft.

Pecos County

Pecos Valley: D. Breeding 5-J University, 1,088 bbl., with 5 per cent water, 2,000 gal. acid, 1,665-1,752 ft.
Earl C. Frates 1 University, dry at 1,687 ft.
White & Baker: Cardinal Oil 1-H White & Baker, dry at 1,781 ft.



Southwestern Mapping Co., Fort Worth

Four Miles southwest of the Dunes field of eastern Crane County is the Gulf 1-F University indicating West Texas' newest field discovery and its first from the 10,000-ft. level. There have been 10,610 ft. of 7-in. casing set in the hole and testing will start the coming week

Upton County

McCamey: Gulf 1-B King, dry at 2,801 ft.
Texas & Pacific 1-E Sherk, 103 bbl., pumping, 3,000 gal. acid, 2,381-95 ft.

Ward County

Estes: Gulf 144 Estes, 551 bbl., open casing, 450-qt. shot, 2,490-2,660 ft.
Gulf 156 Estes, 202 bbl., open casing, 260-qt. shot, 2,677-2,763 ft.

Winkler County

Keystone: J. R. Sharp 3 Jenkins-Gulf, 215 bbl., ¾-in. choke, 270-qt. shot, 3,300-94 ft.
Wildcat: Stanolind and Westbrook & Thompson 1 Hendrick, NW. NW NW Sec. 18, Blk. 26, P.S.L. Sur., dry at 4,000 ft.

NORTHERN WEST TEXAS

West outpost to the south end of production in the Hockley County portion of the Slaughter field, which extends into Cochran and Terry counties, was staked early the past week by Texas Co. as 1 Lucas, located 544 ft. from the north and 440 ft. from the east lines of Section 7, Block X, P.S.L. Survey. The location is a mile west of production in the narrow strip of producers running southward into northern Terry County. It is about 1½ miles south and slightly west of Texas 1 Slaughter, a discovery extension of about 5 miles several years ago and in the early development of the field.

BORDEN COUNTY.—A wildcat in eastern Borden County, B. C. Mann 1 Canning Reynolds, Section 151, Block 25, H.&T.C. Survey, was reported to have drilled a small show of oil from 2,298 to 2,300 ft. at the close of the week. This show is believed to have been in the San Angelo lime of the Sharon field pay horizon to the southeast and in Scurry County. The show was passed up untested and it is continuing below 2,350 ft.

ANDREWS COUNTY.—New deep wildcat for northwestern Andrews County has been staked by Magnolia as 1 B. B. Ralph, 467 ft. from the north and east lines of Section 20, Block 38-A, P.S.L. Survey. Contract depth is 5,500 ft. There are no failures to the deep levels within 7 miles on all sides of the new wildcat.

NORTHERN WEST TEXAS COMPLETIONS

(24-hr. gages based on last 3 hr. of 6-hr. gage)

Cochran County

Slaughter: Honolulu Oil 3-5 Igoe & Smith, 655 bbl., 2½-in. casing outlet, 11,000 gal. acid, 4,940-5,001 ft.
Magnolia 4 Woodley, 763 bbl., 1-in. choke, 10,500 gal. acid, 4,925-83 ft.
Mid-Continent 3-A Mallett, 638 bbl., 3-in. casing outlet, 11,000 gal. acid, 5,015-58 ft.

Gaines County

Seminole: Amerada 1 Austin, 552 bbl., ½-in. choke, natural, 5,100-5,225 ft.
Amerada 4 Haun, 810 bbl., ½-in. choke, 2,000 gal. acid, 5,116-5,330 ft.
Wasson: Continental 8-45 Moore, 508 bbl., 1-in. choke, 11,000 gal. acid, 4,915-5,049 ft.
Continental & Carter 10-44 Moore & Langdon, 668 bbl., open tubing, 10,000 gal. acid, 1,895-5,051 ft.
Cedar Lake: Stanolind 2 Bremont, 640 bbl., swabbing, 330-qt. shot, 4,744-4,844 ft., P.B. from 4,926 ft.

Hockley County

Slaughter: Devonian Oil 3 Hudgins, 1,690 bbl., 3-in. casing outlet, 10,750 gal. acid, 4,973-5,029 ft.
Magnolia 1 Wilson, 133 bbl. oil, pumping 71 bbl. water, 14,500 gal. acid, 4,895-4,950 ft., P.B. from 4,955 ft.
S. W. Richardson 12 Slaughter, 1,402 bbl., 2-in. casing outlet, 10,000 gal. acid, 4,890-4,992 ft.
S. W. Richardson 7-B Slaughter, 607 bbl., 2-in. casing outlet, 5,500 gal. acid, 4,860-4,940 ft.
S. W. Richardson 8-B Slaughter, 1,319 bbl., 2-in. casing outlet, 10,000 gal. acid. 4,890-4,996 ft.
San Andres Prod. 1-A Caddell, 328 bbl., 1 per cent water, 2-in. casing outlet, 8,000 gal. acid, 4,875-4,996 ft.
Stanolind 18-B Slaughter, 1,345 bbl., 2-in. casing outlet, 9,350 gal. acid, 4,990-5,070 ft.
Whittington Bros. 1 Barry, 1,231 bbl., 2-in. casing outlet, 9,000 gal. acid, 4,940-5,005 ft.

Scurry County

Sharon: Dobson & Robinson 7 Burney, 169 bbl., pumping, 830-qt. shot, 2,280-2,460 ft.
R. & Y. Oil 1 Treavy, 165 bbl., pumping, 1,050-qt. shot, 2,191-2,405 ft.

Yoakum County

Wasson: Aloco Oil 8 Walker, 419 bbl., ½-in. choke, 10,000 gal. acid, 4,937-5,269 ft.
Basin States Oil 8 Jordan, 1,137 bbl., open tubing, 10,000 gal. acid, 4,970-5,275 ft.

(Continued on Page 67)

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Among the Drilling

M. E. DAVIS, drilling contractor of San Angelo, Tex., spudded and moved in rotary last week for the drilling of Plymouth Oil Co.'s new wildcat test staked in Somervell County, Texas. The test is 1 T. H. Cousins, 467 ft. out of the SE cor. of a 50-acre tract in the John Echols Survey, 2 miles south of Glen Rose. It is contracted to the Ellenburger lime or 5,000 ft.

HOUSH & THOMPSON Drilling Co., Houston, Tex., has started drilling operations on the company's 2 Clary, a projected 8,500-ft. Wilcox test located in the West Conroe area, Montgomery County, Texas. Contract was received from Gulf Refining Co. for another test in the Eola field, Avoyelles Parish, Louisiana, while at the Raceland field one rig is running for Harry Fotiades.

DELTA Drilling Co., Tyler, Tex., has been granted permits for six tests in the northeastern part of the Slaughter pool in southwestern Hockley County, West Texas, all in Labors 13 and 35, Leagues 40 and 41, Maverick County School Land.

SUPPES & SUPPES, drilling firm of Artesia, N. M., has been awarded contract to drill to 5,300 ft. on a wildcat test 7 miles north and slightly east of the Maljamar field of Lea County, New Mexico. It will be Fullerton Oil Co. of California 1 State, 1,980 ft. from the south and 660 ft. from the east lines of 18-16-33. Contractors will use large machine in going to the contract depth.

PARKER BROTHERS, at last reports, was drilling in sand and shale at 5,985 ft. at the Magnolia Petroleum Co. 1 Culpepper, a wildcat in Lauderdale County, Mississippi. Location of this test is 330 ft. from the north and east lines of the SW cor. of Lot 7, 4-8n-14e.

F. B. PAINE Drilling Co., Dallas, Tex., has the contract for drilling a well in the Fargo field, Wilbarger County, North Texas, for Lewis Production Co. Acreage to which the Paine company will move a rig is the first in the Fargo field acquired by Lewis, which paid $40,000 cash and $140,000 out of production for 200 acres.

FALCON-SEABOARD Drilling Co., Tulsa and Houston, Tex., is rigging rotary in the McAllen gas-distillate area in Hidalgo County, Texas, to drill a well for W. R. Davis & Co. The location is about 7,300 ft. southeast of the field's discovery producer which was completed by R. E. Harding on the E. McCard farm, 300 ft. east of the McAllen city limits. Falcon-Seaboard's contract calls for drilling to 7,500 ft.

GRAY & WOLFE, Houston, Tex., is moving a rotary to the Chiltipin field, Duval County, Texas, for their 1-A Tom Graham, a north offset to the discovery well.

O'NEAL Drilling Co. 1 Wright, a Cochran County, West Texas, wildcat operation 3 miles northeast of the Wiggins & Hyde 1 Dean discovery well, is drilling around 3,000 ft.

AL BUCHANAN Drilling Co., San Antonio, Tex., opened a new producing area 2 miles northeast of the Agua Dulce field, Nueces County, Texas, by the completion of W. B. Osborn and Mid-Continent Petroleum 1 E. Burow, which was completed as a gas-distillate producer in sand at 6,712-14 ft.

E. T. DeARMAN Drilling Co., Tyler, Tex., has obtained contract to drill a wildcat test for Hickok & Reynolds of Cisco, Tex., 5 miles southwest of Canton in Van Zandt County, East Texas. The wildcat operation is projected to the Woodbine sand. Operators have a block of 8,000 acres assembled by Robert E. Lee of Coleman, Tex. Location is on the J. T. Brown 80-acre farm in the Leander Smith Survey.

WYNN CROSBY Drilling Co., San Antonio, Tex., is negotiating for an eight-well contract in the Francitas field in Jackson County, Texas, where a recycling project is planned.

PARKER Drilling Co., Houston, Texas, is moving in for a second test in the Port Allen field, West Baton Rouge Parish, Louisiana, for Amerada Petroleum Co. The location offsets the discovery well, completed a few weeks ago to open the first production in the parish.

CROW Drilling Co., Wichita, Kans., is moving rotary to location for 1 Meir, C W½ SW SE 10-15-14w, ½ mile north of the Trapp field, Barton County, Kansas. The drilling firm is interested in the operation with the Derby Oil Co.

C. I. Drilling Co., Houston, Tex., opened deep-sand production on the east flank of the old Pine Prairie salt dome, Evangeline Parish, Louisiana, with the completion of the company's 1 Evangeline Land & Mineral Co., completed in the Sparta sand at 8,226-33 ft. The well was drilled jointly with Hebert & Smith, and the completion is expected to create an

Heads New Firm

R. L. Fesemyer, who recently resigned as Oklahoma and Kansas representative of the Gilmore Wire Rope Division of the Jones & Laughlin Steel Corp., has organized the Commanche Drilling Co., operating in the Falls City pool of Nebraska

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extensive drilling campaign around the flanks of this old salt-dome structure which has produced only a small amount of oil from shallow sands on top of the structure.

HARRY BASS Drilling Co., of Dallas, Tex., may soon launch a program calling for 8 to 10 wells in the Sejita field, Duval County, where a recycling plant to handle 50,000,000 cu. ft. of distillate-bearing gas daily is projected.

KERLYN Drilling Co. of Oklahoma City, Okla., has contract for a 5,000-ft. wildcat test in northwestern Grayson County, Texas. Albert Finston and Robert Talbot of Tulsa are the operators and the test will be drilled in the southwest 20 acres of the 159-acre R. H. Jewell farm in the William Allen Survey, Abstract 15.

DUKE MATTHEWS, Victoria, Tex., drilling contractor, lost a rig and other equipment valued at $28,000 last week when Averill & Cox 4 Etta M. Terrell, in the Coletto Creek field, 7 miles northwest of Victoria, blew out and cratered. Matthews had drilled to 2,700 ft.

J. W. FRAZIER, Houston, Tex., is testing an interesting outpost well in the Dyersdale field, Harris County, Texas, which if completed for a producer would extend production about 2,000 ft. northwest. The well is 1 S. M. Dwyer, which is bottomed at 4,082 ft., and casing was cemented for testing two sands logged on an electrical log. In Orange County a rotary will be moved in for 1 C. L. Brown, an 8,500-ft. wildcat located south of Orange in the Lizzie Higginbotham Survey.

FAIN-PORTER Drilling Co. is moving tools to a wildcat location for 1 Wilson, C SW 30-2n-22w, Barton County, Kansas, which is scheduled to test Arbuckle dolomite in drilling to 6,000 ft.

ALLEN & MORRIS, San Antonio, Tex., extended production in the Shield field, Nueces County, Texas, a short distance to the north as Shield Oil Co. 2-B W. L. Lewis recovered pipe-line oil on a drill-stem test in the discovery sand, and casing was being cemented for completion. Other activity is reported in the West Ranch field, Jackson County, Texas, and in North Louisiana for Darby Petroleum Co. and Herman Brown.

JOHNSON & KEMNITZ, Inc., Oklahoma City, Okla., drilling firm, has cored sand showing oil in a Grady County, Oklahoma, test for W. H. Atkinson. The test is in the Harness gas field on the Jelks farm in the NE NE SE Section 22-5n-7w. The oil showing was found in 5 ft. of sand recovered in coring from 4,365-75 ft. Gas production in the field is found in a shallow sand.

REX Drilling Co., Shreveport, La., has received contract for drilling a wildcat in Leake County, Mississippi. The test will be drilled for R. W. Williams of Shreveport, and will be the 1 Grant Allen in NW SE 26-12n-7e. The well will be started following the completion of J. P. Evans 3 Johnson in the Tinsley field of Yazoo County, Mississippi, at present drilling below 4,460 ft. in shale.

FAIN Drilling Co., Oklahoma City, Okla., has the contract for Sunray 15 State, drilling near the State Highway Patrol Building in Oklahoma City, which was drilling below 3,800 ft.

W. B. JOHNSON Drilling Co., Longview, Tex., has completed 1 Stutts for E. C. Johnson in the Tinsley field of Yazoo County, Mississippi. The producer, located in NW 31-10n-2w, topped the chalk at 4,879 ft., the Woodruff at 4,935-5,011 ft. and flowed 1,060 bbl. in 24 hours through perforations at 4,935-50 ft.

W. C. RAY Drilling Co., Fort Worth, Tex., is drilling below 1,550 ft. at Sinclair-Wyoming Oil Co. 1 Sorrell, NW SW 2-10n-2w, in the Tinsley field of Yazoo County, Mississippi. Also in the Tinsley field the contractor at last report was coring below 5,020 ft. in the Woodruff at the Sinclair-Wyoming 2 Sorrell.

EDWARD SCRUGGS, Weleetka, Okla., has taken the contract to drill an offset to the Phillanie 1 Morrison, the single producer on an old structure east of Wetumka in Hughes County, Oklahoma. The new well is Potco Coil 1 Morrison, NW SE SW 13-9-10. It is to be drilled with cable tools to the Wilcox sand.

SMITH Petroleum Co., Grand Rapids, Mich., has been awarded contract for drilling a 5,200-ft. test of the St. Peter sand in the Grand Rapids field of Kent County, Michigan. The test will be drilled for the Producers Deep Well Corp., formed by small independent operators in the field for the purpose of making the deep test possible. While the St. Peter sand is not a commercial producing pay in Michigan, available data from the few scattered deep wells drilled in that state indicate it has definite commercial possibilities.

A 9,000-ft. wildcat was recently spudded in Hale County, northern West Texas, by Humble Oil & Refining Co.-Stanolind Oil & Gas Co. et al to give that county its first deep test. Shown while rigging up for the test are Carl Neer, drilling engineer with Humble, and crew of Olson Drilling Co.: H. P. Salsburg, driller; Carl Johnson, derrick man; T. T. Horbton, floor man; Ray Morris, Olson drilling superintendent; J. C. Holden, floor man, and H. C. Smith, floor man. The test is their 1 Byrd, in SE SE NE Section 17, Block K, E.T.R.R. Survey

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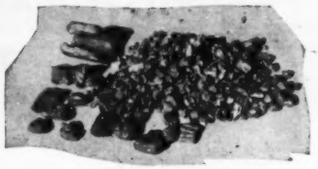

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By ROBERT INGRAM

Production Climbs as New Pay Is Opened at Several Pools

A RECORD demand for Kansas crude oil during May was foreseen last week by the U. S. Bureau of Mines which reported an estimate of 213,000 bbl. a day, 13,200 bbl. over the bureau's April estimate and 3,200 bbl. above the April allowable. Soon after the estimated demand was fixed, the state Corporation Commission followed suit and hiked the allowable for May at 217,900 bbl. This was an all-time high and an increase of 7,200 bbl. a day over April.

In line with this increasingly favorable picture for the Kansas producer was the announcement by T. A. Morgan, oil-conservation director, that the latest record high daily production had been set last week when the state produced an average of 218,500 bbl. a day.

SUMMARY OF COMPLETIONS

Kansas

	No.	Bbl.	Footage
Oil wells: Fields	21	29,079	62,354
Gas wells: Fields	1	*7.5	1,430
Dry holes: Fields	5	.....	16,899
Wildcats	5	.....	12,702
Total	32	.....	93,385

Nebraska

Oil wells: Fields	1	276	2,539
Dry holes: Wildcats	1	.....	2,931
Total	2	.....	5,470

*Million cu. ft.

Crude purchasers, indicating their faith in the Kansas fields, also reached a new high in their nominations for the month which they reported to the Corporation Commission as 220,741 bbl. a day. With all these factors in mind, Harold Medill, attorney for the commission, predicted that the demand for Kansas oil would be around 230,000 to 240,000 bbl. a day by early summer and would probably exceed the state's pipe-line capacity of 235,000 bbl. Thus, the fast-growing oil industry was faced with a problem of transportation in the near future, according to best advice, even though it was pointed out that not all the state's oil is carried in pipe lines.

Field work continued at a steady clip with 46 new tests started during the week and 32 wells completed. New pools, extensions to old pools or new horizons in old pools continued to be reported weekly and topping off the entire picture was the insistent rumor that the Mid-Continent was due for another crude-price raise soon.

New Horizons Opened at Shaeffer and Greenvale; Ainsworth Extended

Stafford County, pacemaker for new discoveries for the past few months, had new production from the Shaeffer pool last week, less than a month after the pool itself was opened. The new oil came from Lansing-Kansas City lime at 3,397-3,405 ft. in Bodine 1 Willcutt, E½ NE SE 4-21-13w, offset to the discovery well of the pool. The 1 Willcutt pumped and flowed 2,036 bbl. of 30-gravity oil on an official test after the pay zone was shot and treated with acid.

It made a bigger well than the Atlantic 1 Shaeffer, NW SW 3-21-13w, discovery well of the pool, which was given an initial potential of 1,175 bbl. a day from the Arbuckle dolomite at 3,552 ft., also treated with acid. The previous week Stafford County's Zenith pool had an important extension to the west.

Meantime, a fourth pay zone—Arbuckle lime—for the Greenvale oil pool of Russell County was reported at the Texas Co. 1 Borrell, NE SE 32-14-12w. The well filled to the top with crude when drilled in to 3,171 ft. in the Arbuckle lime, topped at 3,165 ft. After being acidized with 1,000 gal., the well was estimated at 500 gal. a day. It is ¾ mile north of production, which has been from the Gorham sand, Howard lime and the Lansing-Kansas City lime. Early estimates were that the well would make from 500 to 1,000 bbl. a day.

Northwest of the Ainsworth pool in the Susank area of Barton County, Continental 1 Stoskopf, SE NW SW 28-16-13w, already known to have opened new production, was classed as an extensioner to Ainsworth after being completed for 539 bbl. of 35-gravity crude. The well was drilled to 3,403 ft., acidized with 3,000 gal., but was not shot. Production is from the Arbuckle lime at 3,391-3,403 ft. In addition to its producing acreage in the Susank pool, Continental has 3,360 acres under lease in the township surrounding the discovery well.

Wildcats Plugged

29-15-1w, S½ SW SW ..... Allison 1 King Dry, T.D. 2,722 ft., Mississippi lime 2,672 ft., 5½-in. 2,702 ft., Saline County.

15-16-14w, NE SE NW ..... Stearns 1 Popp Dry, T.D. 3,420 ft., Arbuckle 3,370 ft., Barton County.

10-17-9w, S½ SE NW ..... Phillips 1 Rolfs Dry, T.D. 3,442 ft., Arbuckle 3,426 ft., Ellsworth County.

31-25-15e, SE NE SE ..... Phillips 1 Wix Dry, T.D. 1,525 ft., Mississipi lime 1,504 ft., Woodson County.

4-26-15e, SW NW NE ..... Phillips 1 Fidelity Dry, T.D. 1,593 ft., Mississippi lime 1,490 ft., Woodson County.

Field Drilling Completed

Augusta, Butler County: Davis 2-A Schreve, W½ SW SE 11-28-4e, pumped 35 bbl. oil and 80 bbl. water, Kansas City lime, 2,108-15 ft., T.D. 2,164 ft., acid, 7-in. 2,096 ft.

Brandt, Butler County: Adair & Morton 3 Cannon, NE SW NW 15-28-7e, pumped 378 bbl., Mississippi lime 2,688 ft., T.D. 2,714 ft., acid, 7-in. 2,688 ft.

Burnett, Ellis County: Dickey 1 Carmichael, S½ SW NW 17-11-17w, pumped 3,000 bbl., Arbuckle 3,359-75 ft. T.D., 7-in. 3,359 ft.

Burrton, Harvey County: Hipple 4 Martindale, SE NE SE 18-23-3w, pumped 150 bbl., Mississippi lime 3,255-62 ft. T.D., acid, 7-in. 3,260 ft.

Ferrell, Butler County: Hay et al 4 Ferrell, SE NW SE 21-28-8e, pumped 40 bbl., Mississippi 2,655-72 ft. T.D., acid, 7-in. 2,654 ft.

Hall-Gurney, Russell County: Phil-Han Oil 5 Letsch, NW NW NE 34-14-13w, pumped 1,615 bbl., Lansing 2,842-56 ft. T.D., 7-in. 2,839 ft., acid.

Darby 3 Strecker-A, N½ SE NE 25-14-14w, pumped and flowed 3,000 bbl., Lansing 2,926-40 ft., T.D. 2,940 ft., 5-in. 2,906 ft., acid.

Jordan, Stafford County: Cities Service 2 Jordan, E½ SW NW 15-25-14w, pumped 2,602 bbl. oil and 127 bbl. water, Lansing 3,809-12 ft. and 3,816-19 ft., T.D. 3,838 ft., acid, 5-in. 3,809 ft.

Keesling, Rice County: Derby 1 McGlynn, E½ SE NW 21-20-9w, pumped 134 bbl., Arbuckle 3,285½-90½ ft. T.D., acid, 5-in. 3,286½ ft.

Kraft, Barton County: Shell 6 Radenberg, SE SW NW 3-17-11w, pumped 2,164 bbl., Arbuckle 3,298-3,324 ft. T.D., 4-in. 3,299 ft., acid.

Kraft, North, Barton County: Derby 1, Fries-A W½ NW NE 34-16-11w, dry, T.D. 3,428 ft., Arbuckle 3,423 ft.

Lost Springs, Marion County: Harwood 8 Novak, NE SE SW 28-17-4e, pumped and flowed 812 bbl., Mississippi lime 2,417-23 ft. T.D., 6-in. 2,400 ft.

Lorieaux & Harrington 2 Novak, SW SW SW 28-17-4e, pumped and flowed 306 bbl., Mississippi lime 2,397-2,420 ft. T.D., 5-in. 2,403 ft.

McLouth gas, Jefferson County: McLaughlin 1 Bartlett, SW SW 33-9-20e, 7,500,000 cu. ft. gas, Bartlesville 1,396-1,430 ft. T.D., 7¼-in. 1,394 ft.

Ritz, McPherson County: Wakefield 1-C Koehm, dry, T.D. 2,985 ft., Mississippi lime 2,927 ft., 5-in. 2,933 ft.

Shaeffer, Stafford County: Bodine I Willcutt, E½ NE SE 4-21-13w, pumped and flowed 2,036 bbl., Lansing 3,397-3,405 ft., T.D. 3,565 ft., Arbuckle 3,550 ft., shot and acid, 30 gravity, 5-in. 3,467 ft., new horizon for pool.

Silica, Barton County: Stanolind 3 Schartz, SW SW SE 34-19-11w, dry, T.D. 3,350 ft., 4-in. 3,313 ft.

Silica South, Barton County: Gulf 3 Meyers, W½ SE SE 13-20-11w, pumped 3,000 bbl., Arbuckle 3,251-56½ ft. T.D., 5-in. 3,252 ft., acid.

Silica West, Barton County: Broderick & Gordon 3 Selle, N½ NE SW 17-20-11w, pumped 181 bbl., Arbuckle 3,314-17 ft. T.D., acid, 5-in. 3,300 ft.

Thrall, Greenwood County: Polhamus 1 Britton, SW SE SW 13-24-9e, pumped 3 bbl., Bartlesville 2,205 ft., T.D. 2,221 ft., shot, 5-in. 2,196 ft.

Trapp, Russell County: Shell 1 Maier-B, NE NE SW 35-15-14w, dry, T.D. 3,366 ft., 4-in. 3,341 ft.

Darby 4 Bitter, W½ NE 5-16-13w, pumped 2,586 bbl., Arbuckle 3,350-58 ft. T.D., acid, 5-in. 3,350 ft.

Wilkens, Ellsworth County: Ash et al 2 Splitter, S½ NE SW 19-17-9w, pumped 825 bbl., Arbuckle 3,245½-47 ft. T.D., 5-in. 3,225 ft., acid.

Cities Service 9 Schroeder, NE NE NW 29-17-9w, pumped 3,000 bbl., Arbuckle 3,228-33 ft. T.D., 5-in. 3,229 ft., acid.

Zenith, Stafford County: Gulf 1 Volker, S½ SW NW 2-24-11w, dry, T.D. 3,770 ft., Viola 3,711 ft., 7-in. 3,714 ft.

Gulf 2 Volker, S½ SE NW 2-24-11w, flowed 212 bbl. plus 6 per cent water, Viola 3,676-3,731 ft. T.D., acid, 5-in. 3,676 ft.

Stanolind 6 Richardson, N½ N½ SW 10-24-11w, flowed 3,000 bbl., Viola 3,794-3,820 ft. T.D., acid, 5-in. 3,796 ft.

Stanolind 11 Hartnett, N½ NE NW 13-24-11w, old well drilled deeper from 3,774 ft. in Viola to 3,806 ft. in Viola, acid, flowed 3,000 bbl.

WILDCATS DRILLING

35-1-21w, NE NW ..... Barnsdall 1 Rumsey Base Fort Hays 595 ft., Permian 1,630 ft., Topeka 3,285 ft., Lansing 3,480 ft., drilling 3,545 ft. Norton County.

12-4-14e, S½ SE NW ..... Bumpus 1 Achten Fishing 2,270 ft., Nemaha County.

5-12-16w, NE SE SE ..... Cities Service 1 Jantzen Drilling 2,170 ft., Ellis County.

1-12-22w, N½ NW NE ..... McKnab 1 Krysi Cored porous stains 3,846-58 ft., saturation 3,962-64 ft., cored dense dolomite bleeding oil 3,964-81 ft. (three cores), Sooy 4,013 ft., Arbuckle 4,043 ft., cored dolomite with fair porosity and stains heavy black oil 4,049-52 ft., run 5-in., Trego County.

26-13-15w, E½ SE NE ..... Wakefield 1-A Cook Drilling 3,230 ft., 8-in. 3,200 ft., Russell County.

3-14-21e, NW NE NW Meinholdt & Edwards 1 Stanley Wilcox 1,670 ft., Arbuckle 1,710 ft., T.D. 1,750 ft., H.F.W., Douglas County.

33-15-12w, W½ NW NE ..... Jones 1 Grizzell Topeka 2,652 ft., drilling 2,700 ft., 8-in. 2,640 ft., Russell County.

5-16-1w, N½ SW SE ..... Stanolind 1 Karber First report, Saline County.

10-17-14w, E½ NE NE Helmerich & Payne 1 Reidl First report, Barton County.

20-20-4e, W½ NW NW ..... Holl 1 Faulkerson First report, Marion County.

9-20-13w, W½ NW NW ..... Rine 1 Hart First report, Barton County.

15-21-38w, E½ SE SW Stanolind 1 Billinger Coring 4,798 ft., Kearny County.

8-22-1w, E½ NE NE ..... Winkler-Koch 1 Kaufman 8-in. 190 ft., Harvey County.

8-22-8w, E½ NE SE ..... Hess 1 McKee T.D. 3,705 ft., cleaning out to 3,500 ft., Reno County.

11-23-12w, N½ NE NW Stanolind 1 Mary Hill-B Anhydrite 582 ft., drilling 3,105 ft., Stafford County.

28-22-13w, W½ NW SE ..... Zephyr 1 Shotton Anhydrite 800 ft., drilling 2,225 ft., Stafford County.

5-25-14w, W½ NW NW W. W. W. 1 Wilson Anhydrite 890 ft., Stafford County.

28-26-13e, NW NW SE Brineger 1 Kellar S.D. 100 ft., Greenwood County.

18-26-11w, W½ SW NW ..... Reeves 1 Stark Arbuckle 4,289-4,339 ft., T.D., no show, P.B. 4,158 ft., 4½-in. 4,121 ft., Pratt County.

35-27-2e, E½ SE NW Aylward 1 Aylward Kansas City lime 2,445 ft., drilling 2,485 ft., 10-in. 1,970 ft., Sedgwick County.

21-28-11e, SW SE SE McPherson 1 Clogson Underreaming 8-in. at 600 ft., Elk County.

24-28-11e, SE SW NW ... McPherson 1-A Batesman S.D. 890 ft., Elk County.

36-32-3e, NE NE NE ..... Shell 1 Hall Location, Cowley County.

3-32-8e, NE SW NW Aladdin 1 Westerfield Run 5-in. 3,186 ft., Cowley County.

FOREST CITY BASIN

ST. JOSEPH, Mo., Apr. 28.—Ohio Oil Co. had a Viola lime failure at 2 Bucholz, in the Falls City pool, a well waiting with pipe on top of the lime since last fall. There had been hope it would open up a Viola lime pool. Moreover, the joint venture by the Ohio Oil Co. and Harry Harper, 1 Sibbernsen, made 95 per cent water even though it was the highest well in the pool.

In Missouri, Brin & Nathan cored Hunton lime twice without success in Holt County and were planning to core again. The Indian Territory Illuminating Oil Co. started its wildcat near Westboro in Atchison County, Missouri.

The Ohio Oil Co. was winding up work on its Fremont County, Iowa, wildcat, drilling in the Arbuckle.

Another Mississippian lime oil well has been drilled in in the McLouth pool of Jefferson County, Kansas, by McLaughlin Sons, Inc., and Young. This makes two wells for the pool.

NEBRASKA COMPLETIONS

Nemaha County

Wildcat: Phillips 1 Neil, SW NE 24-4n-14e, dry, T.D. 2,931 ft, Hunton 2,722 ft.

Richardson County

Shubert: Martgan 1 Smith, NE NW NW 31-3n-16e, pumped 276 bbl. fluid, 35 per cent water, Hunton 2,513 ft., T.D. 2,539 ft., P.B. 2,521 ft., acid, 5½-in. 2,515 ft.

K.M.A. May Have Mississippi Lime Producing Zone

By R. MARNE SANFORD

WICHITA FALLS, Tex., Apr. 28.—Closely following three new discoveries in the district during the past 2 weeks was the possibility that two additional wildcats would open new fields. This brings the status of the new-discovery situation to one discovery completed in Young County, two strikes still testing in Montague County, a new indicated discovery well in Clay County testing, and casing set for completion attempts at a Mississippian strike in the western part of the K.M.A. field of Wichita County—all within the past 3 weeks.

Indicated Discoveries This Week

CLAY COUNTY.—Bridwell Oil 1 Myers, C. Thompson Survey, quit as a failure several months ago and plugged only with about 200 ft. of pipe, was reported blowing gas with a spray of oil early the past week. Quit at a total depth of 6,050 ft., the well began to seep oil and gas and built up considerable pressure.

SUMMARY OF COMPLETIONS

North Texas

	No.	Bbl.	Footage
Oil wells: Seymour	3	129	8,668
Archer	2	147	1,926
Clay	2	43	1,401
Walnut Bend	3	800	14,606
Voth	2	180	2,577
Wichita	2	79	2,598
K.M.A.	7	1,698	28,301
Olney	4	183	3,310
Other fields	4	1,100	8,127
Dry holes: Olney	5	.....	4,252
Other fields	11	.....	20,822
Wildcats	2	.....	6,969
Total	47	.....	103,557

West Central Texas

Oil wells: South Carbon	2	90	5,294
Other fields	3	58	2,398
Dry holes: Fields	4	.....	3,727
Total	9	.....	11,419

A hole was cut in the plug and tubing inserted, after which the well flowed for 45 minutes, making an ungaged amount of 37.8-gravity oil.

K.M.A. MISSISSIPPIAN LEVEL.—The K.M.A. field of Wichita County was originally the Strawn pool which later produced from the Ellenburger lime and more than a half dozen shallower levels. It now has a possible Mississippian lime producing level, between the Strawn and the Ellenburger horizons. The indicated strike is Consolidated Oil 2-B Barnes, Section 9, Block 7, H.&T.C. Survey, in the western part of the field and about 2 miles from the Wilbarger County line. The test drilled Mississippian chert from 4,576 to 4,583 ft., Chappell lime from that point to 4,627 ft., total depth, the saturated section being from 4,613 ft. to total depth in broken sections. The prospective strike is about 2 miles northwest of the edge of the Ellenburger lime (Ordovician) area of the K.M.A. field which produces from the 4,400-ft. level. Plug will be drilled from casing cemented on top the show early this week.

MONTAGUE COUNTY.—Southeast of the Ringgold field of western Montague County, Benson & Benson 1 Seay, Ownsby Survey, flowed through various-sized chokes at the rate of 10 bbl. hourly after one pull of the swab kicked the well off. It is bottomed at 5,762 ft. in saturated Bend conglomerate topped at 5,746 ft. The well is approximately 2 miles south and slightly east of the Ringgold field, which also produces from the Bend conglomerate.

About 3 miles south and slightly west of the Rogers & Rogers field in western Montague County, Sinclair Prairie 1 Clingingsmith, SW cor. Section 149, Belcher subdivision, another prospective conglomerate-zone discovery well, is preparing to drill plug from casing. Casing was set at 6,114 ft. after production was assured on a 30-minute drill-stem test from 6,119-28 ft. The test returned 2,500 ft. of oil. Total depth has been corrected to 6,131 ft.

NORTH TEXAS COMPLETIONS

Archer County

Archer: Young & Woody 3 Meade B, 97 bbl. daily, pumping, 959-61 ft.
Young & Woody 4 Meade B, 50 bbl. daily, pumping, 959-65 ft.
A. P. Nicholson 2 Matlock, dry at 670 ft.
Hull-Silk: Petroleum Producers 1 Chauncy, 60 bbl. in 1½ hr., ¾-in. choke, 20-qt. shot, est. 350 bbl. daily, 3,782-3,802 ft.

Baylor County

Seymour: British American 8 Turbeville, 59 bbl. oil and 399 bbl. water, daily, pumping, 1,500 gal. acid, 2,536-43½ ft.
Harvey Drlg. Co. 1 Bank of Bowie, dry at 2,727 ft.
British American 1 Green M, 60 bbl. oil and 60 bbl. water, pumping, daily, 7,500 gal. acid, 3,036-57 ft.
Featherstone & Spragins 2 Green, 10 bbl. oil and 15 bbl. water, daily, pumping, 3,000 gal. acid, 3,063-68 ft.

Clay County

Clay: Akin, Dimock & Costley 5 McInnis C, dry at 1,252 ft.
Gorman & Norwood 5 Taylor 43, dry at 1,324 ft.
Perkins & Dullum 3 Taylor A, 3 bbl. oil pumping, daily, 245-59 ft.
Stavton Oil 1 McGregor, 40 bbl. daily, pumping, natural, 1,134-42 ft.

Cooke County

Walnut Bend: Magnolia 14 Ramsey, 46 bbl. in 4 hr., open tubing, natural, est. 225 bbl. daily, 4,805-24 ft.
Sinclair Prairie 4 Neal Atkins, 75 bbl. in 5 hr., open tubing, natural, est. 325 bbl. daily, 4,850-66 ft.
Sun Oil 12 Snuggs, 82 bbl. in 6½ hr., pumping, natural, est. 250 bbl. daily, 4,681-91 ft. through perforations, T.D. 4,916 ft.
Cooke: Metzner & McKee 5 Henschied, dry at 843 ft.
Voth: Harvey Drlg. Co. 6 Sicking, 30 bbl. daily, pumping, natural, 1,300-8 ft.
Whitfield, Pearson & Grimes 11 Sicking, 44 bbl. in 4 hr., est. 150 bbl. daily, 1,266-69 ft.

Jack County

Jack: Geo. E. Weber 1 Brannon-Smith, 4 bbl. daily, 301-10 ft.
Mathis: Continental Oil 1 Mathis, dry at 3,032 ft.
Bryson: Gwynn & Overby 1 Bowden, 242 bbl. in 6 hr., ¼-in. choke, natural, est. 700 bbl. daily, 3,157-84 ft.

Montague County

Nocona: Pure Oil 13 Keck A, 46 bbl. daily, 5 bbl. water, pumping, 30-qt. shot, 806-31 ft.
Wildcat: Seitz, Comegys & Seitz 1 Ritchey, Sec. 66, Belcher subd., top Caddo 5,445 ft., Simpson 5,763 ft., dry at 6,013 ft.

Wichita County

Wichita: Chas. E. Morrison and Louis Sikes 1 Wolf, dry at 2,110 ft.
C. E. Beavers 1 Huffines, dry at 1,403 ft.
W. E. Prod. Co. 8 Glass, 74 bbl. daily, pumping, 1,308-23 ft.
Hall-Jordan Oil 6 Warren, 5 bbl. daily, pumping, 10-qt. shot, 1,268-75 ft.
Griffith & Kern 1 Schloffke & Reid, dry at 719 ft.
K.M.A.: Hammon, Hanlon & Buchanan 35 Fassett & Tuttle, 74 bbl. in 3 hr., ¼-in. choke, 120-qt. shot, est. 250 bbl. daily, 3,930-52 ft.
Tide Water and Perkins & Cullum 5 Mangold, 30 bbl. in 1 hr., ⅜-in. choke, est. 240 bbl. daily, 3,765-3,813 ft.
Deep Rock Oil 8 Hamilton, 168 bbl. daily, pumping, 120-qt. shot 3,868-3,937 ft.
Tide Water and Perkins & Cullum 28 Pettit, 51 bbl. in 2 hr., ¾-in. choke, est. 275 bbl. daily, 3,855-91 ft.
Bishop Oil 5-B Waggoner, 67 bbl. in 3 hr., 4,000 gal. acid, est. 190 bbl. daily, 3,660-80 ft. and 3,880-93 ft.
Fain-McGaha Oil 1-E Griffin, 50 bbl. in 3 hr., ¼-in. choke, 4,000 gal. acid, est. 225 bbl. daily, top Ellenburger 4,338 ft., pay 4,423-25 ft.
Fain-McGaha Oil 2-E Griffin, 63 bbl. in 3 hr., ¼-in. choke, est. 350 bbl. daily, pay in Ellenburger lime 4,373-77 ft., T.D. 4,390 ft.

Wilbarger County

Fargo: Amerada 1 Cowden, dry at 4,810 ft.
Wilbarger: Christie-Hickman Drlg. Co. 4 Waggoner, dry at 1,932 ft.

Young County

Wildcat: E. L. Orr 1 Laird, Sec. 1393, T.E.&L. Sur., dry at 956 ft.
Olney: L. V. Hull & Sons 1 Young, dry at 1,034 ft.
W. F. Palmer 2 Morgan, 9 bbl. daily, pumping, 920-30 ft.
Paul Atchley 1 Olney, dry at 1,023 ft.
L. T. Burns 9 Rogers, 31 bbl. in 6 hr., pumping, est. 85 bbl. daily, 872-98 ft.
L. T. Burns 10 Rogers, 31 bbl. in 9 hr., pumping, est. 80 bbl. daily, 879-93 ft.
Horwitz & Oldom 20 J. and C. Graham, 9 bbl. daily, pumping, 500 gal. acid, 585-89 ft.
Ard & Hansen 1 Belknap Coal Co., dry at 780 ft.
Burma Pet. 3 Dunagan, dry at 923 ft.
E. M. Remington 1 Remington, dry at 492 ft.
Young: T. D. Humphries 1 Franklin, dry at 3,845 ft.

NORTH TEXAS WILDCAT REPORT

Archer County

Bass & Dillard 1 McGregor, 467 ft. from N and W lines E. Goodwin Sur., Abst. 1135, 6,000-ft. test, first report.
C. W. Snoddy 1 Carter, SE cor. N 60 acres of W 120 acres of Sec. 38, Clark & Plumb subd., 1,400-ft. test.
Deep Oil Development and Jim Jennings 1 Jentch, E 121 acres of W½ John Scott Sur., Abst. 915, drilling 1,000 ft.
J. R. Jones 1 Jones, 825 ft. from E and 150 ft. from S lines Sec. 103, Jefferson C.S.L. Sur., drilling 1,004 ft.
United Prod. 1 Beardon, 900 ft. from W and 1,731 ft. from N lines J. Riley Sur., Abst. 364, drilling 820 ft.
W. A. Wise 1 Abercrombie, 2,100 ft. from S and 117 ft. from W lines Sec. 152, J. W. Harris subd., drilling 1,090 ft.

Baylor County

Amerada 1 Upshur C.S.L., 6,175 ft. from N and 11,250 ft. from E lines, Lot 58, Upshur C.S.L. Sur., Abst. 557, 10-in. 174 ft., drilling 5,505 ft.

Clay County

Gulf 1 C. W. Scaling, NW NW Sec. 31, T.&N.O. Sur., Abst 685, 6,000-ft. test, coring 5,732 ft.
Bridwell Oil 2 Meyers, 3,350 ft. from W and 2,185 ft. from N lines Thompson Sur., Abst. 444, saturation 3,980-88 ft., drilling deeper below 4,000 ft.
C. U. Beasley 1 Campbell, 150 ft. from NW line and 1,150 ft. from N cor. Sec. 140, Byers Brothers subd., drilling 840 ft.

Jack County

Continental 1 Robertson, M. J. Swan Sur., Abst. 1659, top Ordovician 5,380 ft., T.D. 5,577 ft., P.B. 5,514 ft., swabbing est. 50 bbl. oil per 7 hr. but will not flow, still testing, testing on gas lift.
Alma Oil 1 Dees, 2,956 ft. from W and 466 ft. from S lines, George Taylor Sur., Abst. 877, show oil 4,000-12 and 4,055-75 ft., drilling 4,382 ft.

Montague County

Benson & Benson 1 Seay, SE SE SE Sec. 31, Blk. 4, H.&T.C. Sur., 4,000-ft. test, 10-in. 500 ft., top Caddo 5,662 ft., show oil 5,752-62 ft., pay from 5,746-52 ft., flowed by heads then died, preparing clean out.
Sinclair Prairie 1 Clingingsmith, 467 ft. from S and W lines of Sec. 149, Jose Olabarri Sur., Abst. 579, 6,000-ft. test, 9⅝-in. at 749 ft., top Strawn 3,130 ft., top Caddo 5,662 ft., saturation 6,119-28 ft., casing set 6,114 ft.

Throckmorton County

Jimmie Rogers 1 Timmons, NW cor. S½ Sec. 2189, T.E.&L. Sur., 4,200-ft. test, first report.
Rathke Oil 1 Swagerty, 495 ft. from N and 746 ft. from E lines of SW Sec. 258, B.B.B.&C. Sur., 5,000-ft. cable-tool test, T.D. 3,315 ft.

Wilbarger County

W. B. Onohundro 1 Vaughn, 2,330 ft. from E and 330 ft. from N lines, S½ Sec. 9, Blk. 1-C, H.&T.C. Sur., top Ellenburger 5,055 ft., drilling 5,362 ft.
Wilcox Oil & Gas 1 Waggoner, 330 ft. from S and E lines, SW Sec. 43, Blk. 2, H.&T.C. Sur., 5,000-ft. test, drilling 2,325 ft.

WEST CENTRAL TEXAS

FORT WORTH, Tex., Apr. 28.—In Throckmorton County a wildcat which has been closely watched for several weeks is preparing to drill into the Caddo lime after setting casing. It is Rathke Oil 1 Swaggerty, Section 258, B.B.B.&C. Survey, 1 mile west of the town of Throckmorton. Casing is cemented at the top of the lime at 4,462 ft. and total depth is 4,516 ft.

The well is believed to be 150 ft. higher on structure than Humble 1 McKnight, the discovery brought in last month only 6 miles to the southeast. Rathke Oil will deepen the test to the Mississippian lime level expected at about 5,050 ft. should the Caddo lime fail to carry saturation. The Mississippian lime level was greatly advanced as a potential oil reservoir for the area by the completion last week of the Burns 1-A Larrimore, discovery well in the Olney district of Young County only 15 miles to the east.

Stephens County Field Extended

The Loving field in western Stephens County was extended ¼ mile to the southwest when the Knight & Wittmer & Ewing 2 Henry Compton kicked off and started flowing after acid treatment. The well was estimated to be making about 40 to 50 bbl. hourly as it was allowed to clean itself. It had shown for 50 bbl. daily, natural, from the Caddo lime drilled with saturation from 3,595-3,630 ft. It was treated

with 3,000 gal. of acid. The extension is located in the SW cor. NE¼ Section 12, O.A.L. Survey, just southwest of 1 Compton, which was completed early this year for 1,100 bbl. daily.

WEST CENTRAL TEXAS COMPLETIONS

(24-hr. gages)

Brown County

Brown: Hou-San Oil 2 Sewalt, 40 bbl. daily, 2,000 gal. acid, 943-53 ft.

Coleman County

Santa Anna: H. Mace 1 Reeves, temporarily abandoned at 185 ft.

Comanche County

Amity: St. John and Choate 12 Smith, 12 bbl. daily, 10 per cent water, 588-630 ft.

Eastland County

Carbon: Dobbs Oil 3 Thomason, 50 bbl. oil and 50 bbl. water, daily, pumping, 300-qt. shot, 2,552-2,632 ft.
J. O. Fox and Bells Wells Co. 2 Vaughn, 40 bbl. oil and 50 bbl. water, daily, pumping, 330-qt. shot, 2,594-2,662 ft.

Shackelford County

Nail: Hickok & Reynolds 12-A Nail, dry at 1,692 ft.
Wildcat: Georgian Oil 2 Blach, Sec. 391, T.E.&L. Sur., abandoned location.
Shackelford: C. J. Myers 1 Elliott, dry at 870 ft.
Ungren & Frazier 1 Elliott, dry at 980 ft.
R. H. Roark 2 Elliott, 6 bbl. daily, pumping, 808-815 ft.

WEST CENTRAL TEXAS WILDCAT REPORT

Brown County

Guyle Greynolds 1 Crownover, 467 ft. from S and E lines Sec. 26, B.B.B.&C. Sur., 3,000-ft. test, drilling 1,780 ft.
Central Tex. Gas 1 E. S. Smith, NE cor. of W 199 acres of S 291 acres of Wm. Guyman Sur. 86, 2,000-ft. test, 5½-in. at 1,783 ft., show oil, treated 3,500 gal., testing.

Coleman County

West Coast Prod. Corp. 1 Morris, SW cor. of NE 160 acres, J. Greenwood Sur. 304, 7-in. at 2,170 ft., cleaning out.
States Oil 1 Hudson, NW SW Sec. 22, Blk. 2, T.&N.O. Sur., 3,600-ft. test, top sand 3,330 ft., tested 10,000,000 cu. ft. gas, T.D. 3,486 ft.
A. P. Heinze 1 Whittington, NW SE Sec. 4, Blk. 2, T.&N.O. Sur., 3,800-ft. test, drilling 698 ft.

Eastland County

Arnold, Kirk et al 1 J. W. Adams, Jr., 2,708 ft. from N and 761 ft. from E lines David McFadden Sur., 2,600-ft. test, top Caddo 2,457 ft., S.D. 2,553 ft.

Fisher County

General Crude Oil 12 Flanigan, center of old Royston field, top Ellenburger 6,094 ft., perf. casing 5,800-5,920 ft., treated 7,000 gal., no results, S.D. 6,746 ft.
Landers & Eisele 1 Mose Newman, SE NW Sec. 9, Blk. 20, T.&P. Sur., 10-in. 301 ft., oil lime 3,416-34 ft., treated and tested only mud, 7-in. 3,414 ft., testing, show oil 3,660-65 ft., drilling 4,854 ft.

Hamilton County

Lone Star Gas 1 Burks, 1,654 ft. from NE and 1,175 ft. from NW lines James Hays Sur. 16, Pat. D-705, 3,000-ft. test, first report.

Jones County

H. Hines and W. D. Brookover 1 A. M. Wimberly, SW SW Subd. 91, De Witt C.S.L. Sur., 2,500-ft. test, show oil 2,530-33 ft., flowed 166 bbl. oil in 16 hr., S.I.
Danciger Oil & Ref. 1 Jacob Foster, SE¼ W 100 acres, SW¼ Sec. 13, Blk. 13, T.&P. Sur., 3,000-ft. test, S.D. 2,976 ft.
S. B. Roberts 1 Cooper, SE SE SW Sec. 20, Blk. 15, T.&P. Sur., 4,000-ft. test, show oil 4,819-4,900 ft., T.D. 4,919 ft., swabbing and testing.
W. W. Fondren 1 C. P. Rogers, 126-acre tract in N½ Sec. 32, Blk. 18, T.&P. Sur., 3,100-ft. test, drilling 2,816 ft.
Groover & Rose and Jones & Stasney 1 Owens, SE SE Sec. 46, Blk. 15, T.&P. Sur., show oil 2,110-14 ft., 7-in. 2,165 ft., T.D. 2,254 ft., reaming casing.
J. J. McMahon 1 Miller, 400 ft. from S and 330 ft. from E lines Lot 13, Warren Subd. 125, drilling 1,142 ft.
Merry Bros. & Perrini and Butler & Horne Drilling Co. 1 Collins, Lot 25, Godwin & Warren subd., drilling 1,555 ft.

McCulloch County

C. M. Joiner Corp. 1 Lawson, NW cor. Sur. 1093, first report.
Clark 1 Lively, SE cor. Sec. 931, H. F. Hetzfeldt Sur., S.D. 953 ft.

Mills County

C. D. Lane 1 Egger, 2,078 ft. from N and 450 ft. from

(Continued on Page 60)

Illinois Fields

(Continued from Page 52)

Lain O. & G. 1 C. E. Henry A . . SW NW NW 9-6n-10e
T.D. 2,826 ft., Glen Dean 2,285 ft., Barlow 2,403 ft., Cypress 2,428 ft., Aux Vases 2,686-96 ft., Ste. Genevieve 2,736 ft., Fredonia 2,762 ft., McClosky 2,794-2,800 ft., 7-in. 2,780 ft., waiting on cement.
Conner & Arnold 1 First Nat. Bank . . NE SW SW 1-6n-9e
Drilling 2,325 ft.
C. L. Erbin 1 H. Garner ..... SW NW SE 16-6n-8e
Moving in standard tools.

Jefferson County

L. & W. Drlg. 1 C. O. Sargent .... NE SW NW 22-1s-2e
First report, drilling 1,875 ft.

La Salle County

O. L. Greer 1 Sam Davis estate . . SW SW SW 23-35n-2e
St. Peter 220 ft., Chakopee 325 ft., New Richmond 465 ft., Questa 575 ft., drilling 940 ft.

Lawrence County

W. Payne 1 H. Payne ..... NW SW NW 20-3n-11w
Buchanan 1,330 ft., drilling 1,380 ft.

Madison County

Alch & Carroll 1 Rickel ..... SE NE NW 33-5n-6w
Drilling 1,008 ft.

Marion County

Swan-King 1 Martin Cemetery, SW SW SE SW 36-4n-2e
Glen Dean 1,662 ft., T.D. 1,816 ft.
Valbert 1 Logan ..... E½ SE SW 25-4n-1e
Drilling 40 ft.

Montgomery County

A. M. Lacey 2 Luddeke ..... SE NW NW 28-9n-4w
Drilling in Devonian lime at 1,962 ft.
H. C. Detrick 1 W. H. Barnes . . . NW NE SE 20-10n-2w
S.D. 1,522 ft.

Pulaski County

R. G. Williams et al 1 W. L. Richey NE SE SW 9-15s-1e
Drilling 870 ft.

Randolph County

J. R. Rankin 1 B. Bierman ..... SW SW SE 3-7s-5w
Drilling 995 ft.
Ruwaldt 1 Schuette ..... NE NE SW 35-5s-5w
Drilling 80 ft.

Saline County

Thompson 1 O. Carter ..... SW NW SW 16-8s-7e
First report, moving in rotary tools.

Richland County

C. B. Hill et al 1 Wood ..... NE SE SE 21-2n-14w
T.D. 3,094 ft., P.B. 2,808 ft., drilled plug, swabbed dry.

St. Clair County

A. F. Alspach 1 Smith ..... SW SW SE 30-3s-6w
Drilling 460 ft.
Gus Kunze 1 McCurdy ..... SE SW SW 29-3s-6w
S.D. 377 ft.
Burgess 1 Eidman ..... NW SW SE 18-1s-6w
Set 12-in. 76 ft., drilling 150 ft.
G. A. Morris 1 V. Rasp .... E½ NW NW SW 32-2n-7w
Drilling 651 ft.

Shelby County

Rose & Durbin 1 Flenner ..... SW SW SE 9-10n-4e
T.D. 1,702 ft., 7-in. 1,700 ft., waiting on cement.
W. H. Sloan 1 Cutler ..... SE SE SE NE 12-10n-2e
T.D. 1,735 ft., pumped 4 bbl. oil and 1 bbl. water in 3 hr., testing.

Tazewell County

Bartelmay 1 Mathis ..... SW NW SW 24-25n-3w
Drilling 1,195 ft.

Vermilion County

Sylvester 1 Trisler ..... NE NE SE 30-18n-13w
Drilling 530 ft.

Wabash County

Indilliky Oil 1 Price estate ..... NE SE SE 23-1n-12w
First report, Bridgeport 1,081 ft., cored 1,079-1,106 ft., received sand, broken saturation, S.D. 1,500 ft.
Geary Oil 1 McClain ..... SW SE NE 36-2n-12w
Glen Dean 1,632 ft., Golconda 1,706 ft., Barlow 1,785 ft., Cypress sand 1,852-62 ft., Paint Creek 1,939 ft., Benoist 1,951-58 ft., 7-in. 1,950 ft., T.D. 1,963 ft., waiting on cement.

Wayne County

J. W. Sanders 1 Al Hubble ..... E½ SW SE 30-2n-8e
Flowed 70 bbl. an hr., testing.
Gordan-Muhlbach 1 P. Muhlbach, W½ SE SW 36-2n-8e
Set 10-in. 97 ft., drilling 2,105 ft.

White County

H. E. Ledbetter et al 1 Winter .... SE NE SE 24-5s-9e
Kincaid 1,950 ft., Degonia 2,088 ft., Clore 2,127 ft., Palestine 2,210 ft., Menard 2,282 ft., Waltersburg 2,366 ft., Waltersburg sand 2,466-2,530 ft., Glen Dean 2,537 ft., Hardinsburg 2,584 ft., Golconda 2,635 ft., Barlow 2,760-65 ft., Cypress 2,810-45 ft., Paint Creek 2,883 ft., drilling 2,921 ft.
Continental 1 Ackerman ..... NE NW NE 25-5s-10e
Benoist 2,815-42 ft., swabbed 16 bbl. oil and 46 bbl. water in 8 hr., squeezed, waiting on cement.
Ryan et al 1 Pameroy ..... NE NE SE 4-6s-10e
Set 10-in. 111 ft., waiting on cement.
L. B. Jackson 1 Hanna ..... NE NE NE 28-5s-10e
Pennsylvanian sand 1,860 ft., cored 1,863-73 ft., received 7 ft. soft saturated sand, 50-min. D.S. test 1,834-73 ft., received 30 ft. mud and slight show oil, drilling 1,875 ft.

North Louisiana, Arkansas

(Continued from Page 50)

Phillips Pet. Co. 1 R. S. Warnock, Jr., SW NW 1-17-20
Drilling 5,631 ft.

Faulkner County

Gato Oil Co. 1 R. R. Harrell ..... SE SW 35-4n-12w
S.D. 3,625 ft.

Jefferson County

Patterson & Stratton 1 F. & D. Stratton ..... SE NW NE 35-6s-9w
Rigging up.

Lonoke County

A. V. Riley 1 J. T. Gunter ..... SE SE 17-5n-10w
Drilling 2,825 ft.

Ouachita County

Jack Carnes 1-B Rath & Cartier, Inc., N½ NE 2-14-18
Drilling sandy shale, 1,700 ft.

Prairie County

Alvin E. Stark 1 Fidelity Mutual Life Ins. ..... NE NE SW 16-2n-6w
S.D. 990 ft.

Union County

Crescent Drlg. Co. 1 Burns ..... NE SW 13-18-17
Set 9⅝-in. casing 2,295 ft., drilling shale 3,575 ft.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

Roosth & Genecov 1 J. B. Freeman, Wm. H. Burton Sur.
T.D. 2,345 ft., dry 5½-in. casing 2,317 ft.
Sloan Wells 2 Ida Burr ..... M. G. Nail Sur.
312 bbl., T.D. 2,384 ft., 7-in. casing 2,235 ft.

Wildcat—San Augustine County

B. F. Findley et al 1 G. W. Allen .... A. N. Davis Sur.
T.D. 450 ft., dry.

EAST BORDER TEXAS DRILLING REPORT

Bowie County

Normandie Oil Co. 1 E. Powell . . John S. Herring Sur.
Rigging up.

Cass County

British American Oil Prod. Co. 1 East Texas Iron Assn. ..... L. Moren Sur
Drilling shale 3,120 ft.
W. A. Patterson 1 Orr ..... G. W. Morris Sur.
S.D. 2,230 ft.

Marion County

D. L. Butler et al 1 W. G. Bailey . . Robert Maxwell Sur.
S. D. 3,505 ft.
A. J. Vestal et al 1 C. Moseley ..... D. Lane Sur.
Rigged up and S.D.
A. H. Richardson (formerly P. L. Withers) 1 T. G. Allen ..... Robt. Potter Sur.
S.D. 2,366 ft. (cor.).

Sabine County

Sturm & Womack 1-A Keith ..... L. Grace Sur.
T.D. 6,259 ft., fishing.

San Augustine County

Roper & Todd 1 Long Bell Lumber Co. . . N. Hyden Sur.
S.D. 3,021 ft.

Shelby County

Coupar Oil Co. 1 Jones ..... John Latham Sur.
Drlg. 2,875 ft.

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Guthrie and Tecumseh Lake Prove Major Developments

By ROBERT INGRAM

OPERATORS lost no time last week in moving into the new pool west of the Greater Seminole district opened by Hall-Jordan 1 Whitehead, W½ SE SW 36-10-3. Scarcely had Hall-Jordan gaged the well for 754 bbl. in 4½ hours (see below) when members of the nomenclature committee of the Mid-Continent Oil and Gas Association met and named the pool Tecumseh Lake (a compromise between civic booster demands from Shawnee and Tecumseh) and operators held a meeting in the Tulsa offices of the state Corporation Commission to agree on drilling practices. Plans for at least five more wells in the pool had already been made.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	15	2,613	40,409
Wildcats	3	1,168	12,835
Gas wells: Fields	2	*3.75	4,447
Dry holes: Fields	7	.....	18,327
Wildcats	6	.....	13,221
Total	33	.....	89,238

*Million cu. ft.

It was agreed by the Tulsa meeting that the pool would be developed on a 10-acre spacing plan with the exception of the discovery well which was on a rectangular 20-acre location. At least 250 ft. of surface pipe, cemented at top and bottom, is to be set on each well; the oil string is to be 7-in. casing (O.D), cemented with at least 250 sacks, and the wells are to be produced with 2½-in. tubing. These regulations, which will be incorporated in a petition to the commission by one of the operators later, are to cover six sections—Sections 35 and 36 in Range 10-3; Section 31-10-4; Sections 1 and 2 in Range 9-3, and Section 6-9-4.

Stanolind Oil Purchasing Co. had connected a 6-in. line to the well before the 4½-hour gage was taken and at midweek was taking daily runs pinched. The well was pinched to 50 to 75 bbl. a day while lease tanks were emptied. Production is from the Wilcox sand at 5,234-45 ft., with casing cemented at 5,233 ft.

The Corporation Commission, too, cut through red tape and decided that the discovery allowable for the 1 Whitehead would be 30,000 bbl. instead of the customary 15,000 bbl. Rumors flew across Tulsa that Carter Oil Co. had offered to buy the Hall-Jordan holdings, and in Washington, Representative Boren called on the Bureau of Indian Affairs in behalf of the interests of the Pottawatomie Indians who were afraid some of their land might be leased without their consent. Other Indian tribes are administered from the Shawnee agency, but the Pottawatomies claim to be the only tribe entitled to share in oil or gas revenues from the land.

The Pottawatomie County Historical Society called for bids for oil and gas lease on a 3½-acre tract it owns just south of the Indian sanatorium, site of the historic Friends Mission, and the city of Tecumseh was calculating the revenue it could expect from selling water from its municipal lake in addition to about 100 acres of mineral rights it owns in the area. The historical society said it planned to use its revenue to restore the old church and mission.

By the first of this week, at least eight wells were reported slated to start at once, and the following five locations were assured: Gulf 1 Dixon, SE NW SE 36-10-3; Hall-Jordan 1 Pensoneau, SE SW SW 36-10-3; Phillips 1 Luttrell, NW NE NW 1-9-3; Hall-Jordan 1 Blaine, NE NW NW 1-9-3, and Hall-Jordan 2 Whitehead, SW SE SW 36-10-3. Tribute was paid in the daily press to Herman Hurst, Tecumseh, who was credited with making the deal that opened the pool, and old-timers felt the tingle of excitement of bygone days of Seminole.

Three Wells Near Pay In Guthrie Pool

Three offsets to the Sunray 1 Donoghue, discovery well of Logan County's new Guthrie pool opened in NW SE 7-17-1w last month, were approaching pay sands at week's end. They were Sinclair Prairie 1 Sults, SW SW NE 7-17-1w, coring below 5,179 ft.; Continental 1 Donoghue-A, NE NE SW 7-17-1w, drilling at 5,150 ft., and W. C. McBride et al 1 Eastwood, NE NW SW 7-17-1w, had the Bartlesville at 5,079 ft. and was drilling below 5,130 ft. North and west of the discovery the structure was dipping off. The 1 Sults, north offset, was checking 15 to 20 ft. lower than the discovery, and the 1 Eastwood, three locations west of the 1 Donoghue, had the Checkerboard lime at 4,229 ft., about 40 ft. low. A mile south of the discovery, North American Oil Co. 1 Hirzel, NE NW SE 18-17-1w, was drilling below 2,200 ft.

Meantime, it was announced that Sunray had purchased the lease on the southwest quarter of 13-17-2w, a mile southwest of the discovery well, from Owen Acton of Guthrie. The Guthrie City Council also accepted the bid of John A. Lilly of Oklahoma City for a lease on Noble Park on the edge of the city, estimated at 16 acres in extent. Mr. Lilly, the only bidder, offered $25 an acre bonus with a flat rental of $25 a year for the last 4 years of a 5-year lease.

Shallow Calvin Sand Developed at Fish

Revival of the 11-year-old Fish pool, one of the more important areas of the state which to date has produced about one-half its estimated 30,000,000-bbl. ultimate recovery, was in full swing this week due to opening of shallow production from the Calvin sand at about 1,480 ft. Three wells were completed (see below) and five more were drilling or testing. There was indication that the Turner Troup et al 1 Fish, SW SE NW 19-7-8, an edge well, might define the Calvin area as it was swabbing 11 bbl. of fluid an hour cut somewhat with salt water. However, Rudco Oil & Gas was staking a location to the west in NE SE 25-7-7, and present operations in Sections 19 and 18, Range 7-8, were apparently certain to be fairly good wells. Mid-Continent Petroleum Corp. was setting the pace in the new drilling, but Troup, Winona Oil Co. and Patterson & Norvell were also active.

DISCOVERIES GAGED

Amerada 1 Peters, SW NW SE 27-8-4, flowed 766 bbl. through 1-in. choke, 37.6 gravity, Hunton 3,863-79 ft., acid, 665,000 cu. ft. gas, T.D. 4,346 ft., 7-in. 4,322 ft., P.B. 3,935 ft., perf. Hunton, named North St. Louis, Pottawatomie County.

Anderson-Prichard 1 Hood, SE SE 13-9-4, flowed 240 bbl. through ¾-in. choke, 38 gravity, Hunton 4,122 ft., 5-in. 4,122 ft., Sylvan 4,151 ft., T.D. 4,152 ft., acid, west extension to West Earlsboro pool, Pottawatomie County.

Paul McIntyre 1 Brown, SW SE NE 14-9-7, flowed 162 bbl. oil and 240 bbl. water, 38.5 gravity, perf. Cromwell 3,443-51 ft., 4,300,000 cu. ft. gas, T.D. 4,337 ft. in Wilcox, 7-in. 4,300 ft., Seminole County.

WILDCATS PLUGGED

24-13-4, SE SE NE ..... Gray 1 Lay
Location abandoned, Lincoln County.

23-25-6, SW SW SW ..... Norbla 1 Osage
Dry, T.D. 2,867 ft., Mississippi chert 2,850 ft., H.F.W., Osage County.

13-1-17w, NE NW SE ..... Stovall 1-A Howell
Temporarily abandoned, T.D. 555 ft., Tillman County.

33-19-4w, SW NE SW ..... Kerlyn 1 Waring
Dry, T.D. 5,201 ft., lower Layton 4,772-4,808 ft., Logan County.

3-1s-13w, E½ W½ NE ..... Runyon 1 Whitehead
Dry, T.D. 352 ft., Comanche County.

26-2s-13w, NW NE ..... Ellison 1 Harris
Dry, T.D. 2,296 ft., granite 2,294 ft., Cotton County.

13-6s-6w, NE NE SW ..... Johnson 2 Bounds
Dry, T.D. 1,960 ft., Jefferson County.

FIELD DRILLING COMPLETED

East Ada, Pontotoc County: Moore 2-C Julius, 1,750,000 cu. ft. gas, Senora sand 1,150 ft., T.D. 1,194 ft.

Allen, Pontotoc County: Huddleston 3 Freeman, NE NW NE 33-5-8, pumped 25 bbl., sand 668-92 ft., T.D., 7-in. 668 ft.

Altus, Jackson County: Kerbow 3 Walls, NE NW NW 11-1-20w, dry, T.D. 1,634 ft., 7-in. 1,590 ft.

Aloma 5 Robertson, NE SW SE 15-1-20w, pumped 38 bbl. oil and 8 bbl. water, 7-in. 1,363 ft., T.D. 1,584 ft.

Cement, Caddo County: Pace 4 Davis, N½ SW NW 6-5-9w, flowed 200 bbl., sand 3,389-3,404 ft., T.D., 5-in. 3,385 ft.

Ohio 11 Wagner, NW NW SW 12-5-9w, potential 1,075 bbl., T.D. 3,963 ft., 4½-in. 3,948 ft., perf. 3,845-56 ft., 3,868-74 ft., 3,884-88 ft., 3,891-3,914 ft.

Magnolia 10 Medrano, SE NW SE 36-6-10w, pumped 60 bbl. oil and 24 bbl. water, 8-in. 3,508 ft., sand 3,506-23 ft., T.D.

Cowan, Okfuskee County: Phillips 2 McMahon, SE NE NW 11-11-10, swabbed 80 bbl. oil and 2 bbl. water, Cromwell 3,214-38 ft. T.D., 5-in. 3,151 ft.

Cushing, Creek County: Big Four 4 Young, S½ N½ NW 24-19-7, 5 bbl. oil an hour, 7-in. 2,630 ft., Red Fork 2,635-55 ft., T.D. 2,778 ft., P.B. 2,680 ft.

Droppleman, Okfuskee County: Lee 1 Ramsey, SE NE NW 35-12-8, dry, T.D. 1,690 ft., 10-in. 133 ft.

McMahon 2 Edwards, SW SE SE 27-12-8, flowed 20 bbl., Cromwell 3,659 ft., 5½-in. 3,658 ft., T.D. 3,670 ft., P.B. 3,655 ft.

Seran 7 Seran, NE NW NW 2-11-8, location abandoned.

West Earlsboro, Pottawatomie County: Stanolind 1 Billington-C, NW SE NE 26-9-4, flowed 520 bbl. in 14 hr., Hunton 4,177 ft., Viola 4,342 ft., T.D. 4,431 ft., 5½-in. 4,393 ft., perf. 4,177-97 ft., acid.

Empire, Stephens County: Pace 28 Allen, NE SE NE 3-2s-8w, pumped 15 bbl. oil and some water, T.D. 2,278 ft., 5-in. 2,275 ft., perf. 2,208-17 ft.

Fish, Seminole County: Mid-Continent 1 Fish, NW NE NW 19-7-8, pumped 180 bbl., Calvin zone 1,463 ft., lower Calvin 1,482 ft., shot 1,482-1,501 ft. T.D., 5-in. 1,461 ft.

Mid-Continent 1 Barnhart, NW SE NW 19-7-8, pumped 195 bbl., lower Calvin 1,468-80 ft. T.D., 5-in. 1,473 ft., shot 1,480-1,505 ft.

Mid-Continent 3 Ferguson, SE NW NW 19-7-8, pumped 125 bbl., lower Calvin 1,480-96 ft., shot 1,485-96 ft., 5-in. 1,480 ft.

Hobart, Kiowa County: Lewis 1 Mitchell, NW SE 19-7-17w, dry, T.D. 1,378 ft., 7-in. 1,297 ft.

Kellyville, Creek County: Midco 1 Abraham, SW SE NE 32-17-10, dry, T.D. 2,800 ft., Mississippi lime 2,790-2,800 ft.

Laffoon, Lincoln County: Kerlyn 2 Froug, NE SW NW 2-13-6, swabbed and flowed 40 bbl., 6-in. 4,209 ft., Wilcox 4,238-54 ft., shot 4,238-47 ft., second Wilcox 4,269-74 ft., est. 2,500,000 cu. ft. gas.

Mannford, Creek County: Fortner 1 Isles, SW NE SE 1-19-9, pumped 15 bbl. an hour, Red Fork 2,048-93 ft., T.D. 2,097 ft., shot.

Olympic, Hughes County: Wrightsman 1 Harjo, SW SE NE 2-9-8, dry, T.D. 4,007 ft., cored stained Misener sand 4,404-07 ft.

East Pawnee, Pawnee County: Alma 1 Reid, SE SW NW 1-21-5, dry, T.D. 3,452 ft., Simpson sand.

Alma 2 Hill, SE NW SW 1-21-5, dry, T.D. 3,366 ft., Simpson chert and dolomite 3,360-66 ft., 5-in. 3,234 ft., P.B. 3,330 ft., 2½ bbl. oil and 7½ bbl. water.

North Terlton, Pawnee County: Major 2 Moore, S½ SW NE 12-20-7, old well plugged back from 2,464 ft., shot Tyner 2,615-20 ft., pumped 45 bbl. oil and 85 bbl. water.

Tiger Flat, Okmulgee County: Springer 1-A Pine, SE SW SW 5-12-12, 2,000,000 cu. ft. gas, 1,100 lb. R.P., 5-in. 3,210 ft., Wilcox 3,240 ft., T.D. 3,253 ft.

WILDCATS DRILLING

East of the Meridian

27-2-9, W½ SE NW ..... Ramsey 1 Harryman
Drilling 4,177 ft., Coal County.

16-3-1, E½ NE SE ..... Stanolind 1 Little Arbuckle
4,590 ft., cored hard dry dolomite 4,771-86 ft.. T.D. 4,866 ft., electric log, Garvin County.

14-5-6, SE SE SE ..... Norville 1 Fleet
Pennsylvania Caney 2,125 ft., T.D. 2,285 ft., electric log showed Calvin 1,220 ft., show oil and gas 1,240-63 ft., sand 1,934-48 ft., show oil and gas, sand 1,948 ft., water, S.D., Seminole County.

29-6-5, SE NE NW ..... Hall-Jordan 1 Swan
T.D. 3,832 ft., new operator, Hembree-Hembree, to run pipe and test upper shows, Pottawatomie County.

31-7-7, SW NE NE ..... Eagle 1 Mann
S.D. 2,208 ft., Seminole County.

16-9-4, E½ NE SW ..... Crosbie 1 School
Drilling 1,860 ft., Pottawatomie County.

11-9-9, SE SW SW ..... Mid-Continent 1 Felix
First report, Hughes County.

13-9-9, SW SW NW ..... Mid-West 1-B Hill
First report, Hughes County.

23-9-11, SW NW SE ..... Arrow 1 Grannerman
Drilling 2,824 ft., Hughes County.

27-9-24, NW SW NW ..... Western Oklahoma 1 Ward
Drilling 2,040 ft., Le Flore County.

36-10-3, W½ SE SW ..... Hall-Jordan 1 Whitehead
Drilled plug with 1,000 ft. water load, total fillup 4,000 ft. fluid in 25 min., ran bailer six times, started to flow by small heads, headed up and blew over crown block, total flow 15 min., went dead, S.I. 15 min., opened made a 10-min. head, S.I. for tanks, open April 16 and flowed 245 bbl. in 1¼ hr., S.I. for more tanks, est. 2,000,000 cu. ft. gas, April 18, flowed 259 bbl. in 1 hr. through open casing, S.I. 2½ days, April 20 flowed 240½ bbl. first hr., 163.8 bbl. second hr., 136.5 bbl. third hr., 137.15 bbl. fourth hr., 76.05 bbl. last ½ hr., total flow in 4½ hr. 754 bbl., gravity 38, to run tubing, Pottawatomie County.

33-10-8, NE NE NE ..... Mico 1 Davis

(Continued on Page 61)

New Pool in Prospect in Marsh East of Mississippi River

By F. L. SINGLETON

NEW ORLEANS, La., Apr. 28.—Another new oil field was added to the Delta area in the Louisiana coast district as Texas 1 State-Octave Pass, Plaquemines Parish, flowed at the rate of 125 bbl. of 35-gravity oil per day through a 5/32-in. choke. Working pressure was 700 lb. This well which has been looked upon as a probable pool opener for several weeks, was drilled to a total depth of 11,494 ft., and was tested through perforated casing at 11,420-50 ft. The well is not officially completed in view of the fact that several sand sections are known to have been logged, and these will no doubt be tested before final completion is made. At the close of the week the hole had been plugged back with a bridge plug, and a test was scheduled to be made at 11,370-11,400 ft. If completed at its present depth the well will be the second deepest crude producer in the district, being exceeded only by a few feet by Shell 1 Norman Breaux in the West Lake Verret field, St. Martin Parish, which is producing from sand at 11,490-97 ft.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Fields	20	4,081	144,252
Gas wells: Fields	1	.....	5,733
Dry holes: Fields	4	.....	27,084
Wildcats	1	.....	5,454
Total	26	.....	182,523

The well is situated on the east side of the Mississippi River in 32-20s-20e, several miles southeast of the Grand Bay field. The completion adds to the potentialities of this area, most of which is composed of marshlands in which only a limited amount of wildcatting has been done.

LAKE BORGNE.—While final completion of the above well is being awaited, interest in this area is centered on Texas 1 State-Delacroix Island in 34-15s-14e, Plaquemines, south of Lake Borgne, which is scheduled to be retested after salt water was recovered on a drill-stem test through perforated casing at 9,900-20 ft. Total depth of the well is 11,165 ft., and an electrical log is reported to have shown several possible oil sands.

PINE PRAIRIE.—C. I. Production Co., Inc., 1 Evangeline Land & Mineral Co., completed earlier in the week to open deep sand production on the old Pine Prairie dome, Evangeline Parish, ranks as one of the best producers in the district and the completion very definitely revives interest in the Sparta-Wilcox trend of this particular area. On a state potential gage the well flowed at the rate of 810 bbl. of 40-gravity oil daily through a ¼-in. choke. Tubing pressure was 1,425 lb., and casing pressure was 1,460 lb. The sand section which is believed to be the Sparta, the upper member of the Wilcox, was logged by an electrical log from 8,210-36 ft., and the well was completed through perforated casing at 8,226-33 ft.

The well is located in 37-3s-1w, on the east flank of the structure, which is on strike with the Ville Platte field, being located approximately 13 miles due west. While no new locations had been announced, protection around the well is held by Gulf Refining Co., Humble Oil & Refining Co., Sun Oil Co., Stanolind Oil & Gas Co., Pan American Refining Co., and additional development can be expected to be started in the near future.

Rapides Parish Wilcox Test

Along this same trend, and located west of Alexandria, Rapides Parish, Navarro 1 Cooper topped the Wilcox sand at 4,656 ft., and the well is drilling ahead in sand with a salty taste below 4,780 ft. No showings of oil or gas have been logged.

PECAN LAKE.—The Pecan Lake prospect, Cameron Parish, was proven for gas-distillate production as Superior Oil Co. 1 Mimao Corp. flowed an unestimated amount of gas and distillate on production tests in two sand sections, and the well is drilling ahead in search of additional sands. The well is bottomed at a total depth of 10,555 ft., and sand sections logged by an electrical log were tested at 10,170-80 ft., and at 10,384-90 ft. The well is in 29-14s-3w, about 9 miles south of the Grand Lake field.

WESTWEGO.—Reese E. Carter 1 Craven, ½ mile east of the discovery well of the Westwego field, Jefferson Parish, which is being recompleted in an attempt to lower the gas-oil ratio, reperforated casing at 8,998-9,004 ft., and the well is flowing at the rate of 20 bbl. of fluid per hour of which 50 per cent is oil and the balance water and drilling mud. This well was completed several weeks ago to establish the first commercial production in the area when it flowed at the rate of 125 bbl. of oil per day through a ¼-in. choke from perforated casing at 8,993-98 ft.

PORT ALLEN.—Amerada Petroleum Corp. is moving in material for another test in the Port Allen field, West Baton Rouge Parish. The well is 2-A Wilberts Sons Lumber & Shingle Co., located about 1,100 ft. southeast of the discovery well, which is shut in for storage after flowing at the daily rate of 270 bbl. of oil through a 5/32-in. choke from sand at 9,610-20 ft. The discovery of this field has increased interest in this particular area, and leasing and geophysical work has become quite active in the adjoining parishes.

ROSE BLUFF.—Location for a wildcat test was announced for the Rose Bluff prospect, Calcasieu Parish by Hecate, Inc. The well is 1 A. S. Vincent in 36-10s-10w. This will be the sixth test to be drilled in the area.

ERATH.—Operators interested in the Erath field, Vermilion Parish, were watching the outcome of scheduled production test on two 11,000-ft. wells, both of which if successfully completed would mark up important extensions. Phillips 1 Dugas, east of production, cemented casing below 11,740 ft., while Texas 1 Broussard, ½ mile south of production cemented casing at 11,604 ft. Although details are not available, electrical logs of both wells are reported to have shown favorable indications. Development of the structure thus far has been disappointing and the outcome of the two wells is being watched with interest.

PERKINS.—Humble Oil & Refining Co. is resuming operations in the Perkins gas-distillate field, Calcasieu Parish, as material was being moved in for 1 Edgewood Land & Logging Co. in 25-6s-10w. A recent test drilled southwest of the discovery well showed promise of oil production in a shallower sand, and this section is expected to be tested as well as the deeper pay. The location is northeast of the discovery well.

EDGERLY.—Although no gage was available, Gulf Refining Co. 1 Miller, located on the southeast flank of the Edgerly field, Calcasieu Parish, is reported to be showing for a producer while testing through perforated casing at intervals from 6,911-39 ft. Tubing pressure was reported to be 2,000 lb. This well was reported as temporarily abandoned the previous week when it failed to flow when tested below 7,500 ft. This is the deepest production to be found on the dome, and additional development is expected to be announced in the near future.

LOUISIANA GULF COAST COMPLETIONS

Acadia Parish

Jennings: G. Michael 1 Jules Clement, 123 bbl., pumping, perf. casing 3,565-75 ft., T.D. 3,860 ft.
South Crowley: Humble 2 Finch, dry, T.D. 9,222 ft.

Calcasieu Parish

Iowa: Stanolind 1 Gilson, 340 bbl., 12/64-in. choke, perf. casing 8,256-64 ft., T.D. 9,050 ft.

Cameron County

East Hackberry: Gulf 12 Erwin, 385 bbl., ¼-in. choke, perf. casing 7,488-96 ft., T.D. 7,600 ft.
Texas 18-B State, 265 bbl., 9/64-in. choke, T.D. 9,222 ft.
Union Sulphur Co. 46 Watkins, 130 bbl. oil, plus 3 per cent salt water, perf. casing 3,038-48 ft., T.D. 3,197 ft.

Evangeline Parish

Ville Platte: J. K. Hughes 4 Ortego, 432 bbl., ¼-in. choke, perf. casing 10,150-58 ft., T.D. 10,237 ft.
Continental 1 Guillory, 388 bbl., ¼-in. choke, perf. casing 10,196-10,212 ft., T.D. 10,230 ft.

Iberia Parish

Fausse Point: Sun 8 Planters, dry, T.D. 2,317 ft.
New Iberia: Texas 4 DeCuir, 115 bbl., 9/64-in. choke, perf. casing 5,842-94 ft., T.D. 6,401 ft.

Iberville Parish

Bayou Blue: Superior 1 Grief Bros., dry, T.D. 11,049 ft.
St. Gabriel: George H. Echols 1-A Gueymard, 203 bbl., ⅛-in. choke, perf. casing 7,772-84 ft., T.D. 7,831 ft.

Jefferson Davis Parish

Woodlawn: Union Sulphur 7 Calcasieu National Bank, 210 bbl., 9/64-in. choke, perf. casing 9,056-66 ft., T.D. 9,562 ft.

La Fourche Parish

Golden Meadows: Republic Petroleum Corp. 2 Thomas Esponage, 173 bbl., 10/64-in. choke, perf. casing 5,436-42 ft., T.D. 5,490 ft.
Republic Petroleum Corp. 2 LeFort, 137 bbl., 10/64-in. choke, perf. casing 5,148-54 ft., T.D. 5,173 ft.
Texas 19 L. L. & E. Golden Meadows, dry, T.D. 4,496 ft.
Leeville: Texas 80 L. L. & E. Leeville, 75 bbl., ⅛-in. choke, sand 7,931-67 ft., T.D. 9,194 ft.

Plaquemines Parish

Quarantine Bay: Gulf 26 State, 296 bbl., 5/32-in. choke, perf. casing 8,500-10 ft., T.D. 8,517 ft.

St. Martin Parish

Anse La Butte: Stanolind 2-B J. J. Martin, 259 bbl., 5/32-in. choke, perf. casing 6,330-57 ft., T.D. 6,411 ft.
Stanolind 1 Thomas Stark, 161 bbl., ¼-in. choke, T.D. 6,607 ft., P.B. 4,145 ft.

St. Mary Parish

Charenton: Goodwin-Lucey 7 Giles, 8 bbl., pumping 949 ft.
Cote Blanche: Texas 2 State, dry, T.D. 5,454 ft.

St. Landry Parish

Port Barre: Grubb & Hawkins 1 J. S. Watkins, gas well, perf. casing 1,317-27 ft., T.D. 5,733 ft.

Vermilion Parish

Gueydan: Fohs 4 Mulvey, 78 bbl., pumping, top sand 4,846 ft., T.D. 4,855 ft.
Union Sulphur 1 J. B. Baker, 125 bbl., 10/64-in. choke, perf. casing 9,738-48 ft., T.D. 9,846 ft.

Terrebonne Parish

Caillou Island: Texas 4 State, 178 bbl., ¼-in. choke, perf. casing 7,925-55 ft., T.D. 8,020 ft.

LOUISIANA GULF COAST DRILLING REPORT

Calcasieu Parish

Gulf 1 Calcasieu National Bank, Hayes area, S.D. 9,857 ft.

Iberia Parish

Gulf 1 Petit Anse Co., Avery Island dome, drilling shale 8,530 ft.

Jefferson Davis Parish

Union Sulphur 1 J. G. Gray, south flank of Welsh dome, drilling shale 2,615 ft.

La Fourche Parish

Gulf 1 State-PP, Bay Marchand prospect, drilling shale 2,836 ft.

St. Mary Parish

William Helis 1 Avoca, Inc., Avoca Island prospect, drilling shale 1,230 ft.
Humble 1 Marin, Bayou Sale prospect, 16-16s-9e, drilling shale 10,229 ft.

Terrebonne Parish

Barnsdall 1 State, Point Au Fer prospect, drilling shale 5,537 ft.
Gulf 1 Picou, Lapyrouse prospect, 70-20s-18e, drilling shale 8,579 ft.
Sinclair Prairie 1 Aragon Plantation, Bourg area, drilling sandy shale 10,007 ft.

West Central Texas Fields

(Continued from Page 58)

W. lines Sec. 4, Wm. Haynes Sur., 3,500-ft. test, S.D. 900 ft.
Three Widows Oil 1 Burdett, 467 ft. from N and W lines Lot 59, Hayes C.S.L. Sur., 3,000-ft. test, 12½-in. at 235 ft., S.D.

Palo Pinto County

Hickok Prod. and Reynolds 1 J. R. Halsell, 467 ft. from S and W lines Sec. 92, B.B.B.&C. Sur., Abst. 105, 5,500-ft. test, 1,000,000 cu. ft. gas from 4,225-45 ft., drilling 4,405 ft.
W. K. Gordon 1 Nolan, NE SE Sec. 86, Blk. 3, T.&P. Sur., top Barnett 4,045 ft., S.D. 4,067 ft.
P. F. Cole 1 Crawford, 467 ft. from W and 90 ft. from N lines Sec. 888, T.E.&L. Sur., 5,000-ft. test, drilling 150 ft.

Shackelford County

J. F. Baker and M. E. Daniels 1 Davis, SE NW Sec. 3, Blk. 13, T.&P. Sur., drilling 2,265 ft.
Glen Myers 1 Green, SE NW Sec. 68, Blk. 12, T.&P. Sur., 1,500-ft. test, drilling 619 ft.
Aragon Oil 1 Wells Pasture, SW cor. Sec. 39, B.A.L. Sur., 4,000-ft. test, drilling 607 ft.

Somervell County

M. E. Davis 1 Cousins, 457 ft. from SE and NE lines of tract in John Echols Sur., 7,500-ft. test, R.U.R.

Stonewall County

Leader Oil 3 Carlisle, 2,136 ft. from N and 2,127 ft. from E lines of Sec. 292, Blk. D, H.&T.C. Sur., 5,250-ft. test, T.D. 4,165 ft., fishing drill pipe.

Extensions Found in Willow Slough-Seabreeze Area

By NEIL WILLIAMS

HOUSTON, Tex., Apr. 28.—A major extension or a new producing area was opened in the Willow Slough area, Chambers County as Sun 3 Jackson, approximately 1½ miles west of production flowed at the estimated rate of 30 bbl. of 35.9-gravity oil through a ¼-in. choke. Tubing pressure was 1,200 lb. The well was drilled to a total depth of 8,294 ft., and production was obtained by perforating casing in the Frio sand at 8,250-80 ft.

The well is located in the T.&N.O. Survey No. 126, about 1,700 ft. northwest of a dry hole. Whether the well is located on the same structure as Willow Slough will be determined by future development. It is generally believed that the well will be classified as a new field probably separated from the Willow Slough area by a fault or graben condition such as exists between Willow Slough and the Seabreeze field, which is located only 2 miles northeast. Gas-distillate and crude production has been developed in both areas from several sands in the Frio formation at intervals from 8,100-8,800 ft. Most of the acreage is controlled by Sun Oil Co., and no material increase in development is anticipated by the completion.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Oil wells: Lolita	1	480	5,284
West Ranch	2	104	11,402
Other fields	15	3,440	117,236
Gas wells: Fields	1	.....	6,024
Dry holes: Fields	1	.....	9,594
Wildcats	5	.....	29,958
Total	25	.....	179,498

SEABREEZE.—Gas-distillate production in the Seabreeze field, Chambers County, was extended about 2,400 ft. north as Sun 3 Seabreeze Land Co. flowed 29 bbl. of distillate and 2,663,000 cu. ft. of gas per day through a ⅞-in. choke. Tubing pressure was 3,000 lb. Total depth is 8,879 ft. and the well was completed through perforated casing after plugging back to a total depth of 8,827 ft. In the Big Ridge area, the company's 1 Mackelburg, 1,000 ft. north of production is testing through perforated casing at 8,847-48 ft., but no gage was available.

DYERSDALE.—Interest in the Dyersdale field, Harris County, was centered on J. W. Frazier 1 S. M. Dwyer, about 2,000 ft. northwest of production, which is in the process of testing two sands logged by an electrical log. Total depth of the well is 4,082 ft., and 5½-in. casing was cemented on bottom preparatory to testing sand at 4,059-77 ft., and at 3,480-96 ft. A test of the 4,000-ft. sand which is the discovery pay at Dyersdale, is reported to have shown a small amount of oil and mud, and the hole was plugged back to test the 3,400-ft. horizon. The latter section, which is the Miocene sand, has been cored in field proper, and produces gas in one well. However, the sand does not extend over the field proper, and any production developed is expected to be limited to a small area.

FANNETT.—On the extreme north flank of the Fannett dome, Jefferson County, Superior Oil Co. of California was preparing to deepen 1 Bordages after the well showed a small amount of gas when tested through perforated casing at 9,870-9-945 ft. Seven-inch casing was cemented on bottom at 10,078 ft., after the well attempted to blow out. The Discorbis was topped at 7,268 ft., Heterostegina at 7,478 ft., Marginulina at 8,048 ft., Frio at 8,360 ft., and the Marginulina Texana at 8,680 ft.

New Sand at West Ganado

Although not officially completed, Pure 2 Spacek, ¼ mile southwest of production in the West Ganado field, Jackson County, is showing promise of opening production from a new sand. The well was tested through perforated casing at 5,980-98 ft., and on a 24-hour gage it flowed 176 bbl. of oil plus 15 per cent salt water through a 10/64-in. choke. Tubing pressure was 1,450 lb., and casing pressure 550 lb. Gravity of the oil was 34 degrees. At the close of the week the perforations were squeezed off and another test is expected to be made in the same section. Should the test fail, a test will be made of the 4,700-ft. sand where a previous drill-stem test recovered several hundred feet of oil.

MAURBRO.—In the same county, and located in the southern part of the Maurbro field, Humble 1 G. W. Edwards is being recompleted after it showed nothing but gas when tested at 5,213-18 ft., the total depth. Sand and shale showing gas was logged at intervals from 5,188-5,206 ft., and sand with an oil show from 5,206-18 ft.

ANGLETON.—Gas-distillate production in the Singleton field, Brazoria County, was extended approximately 1,300 ft. southwest by the completion of Glenn McCarthy 1 R. H. Carr. Drilled to a total depth of 10,653 ft., the well was completed in sand topped at 10,416 ft., for an initial production of 188 bbl. of 52-gravity distillate per day through a series of ¼-in. chokes. Tubing pressure was 2,675 lb., and casing pressure 3,400 lb.

CHENANGO.—Approximately 3 miles west of the Chenango field, Brazoria County, Stanolind 1 Vieman was abandoned at 9,750 ft. and the rig is being moved to the Chenango field, where location was recently made for 1 Smith, about 900 ft. southwest of the discovery well.

KATY.—The Katy gas field, Waller County, generally recognized as one of the largest gas reservoirs in the area, was extended about 1¼ miles northwest as Humble 1 Loucks was completed in sand at 7,208-55 ft. Several gas-distillate sands are present throughout the field, and on a recent test the well flowed 5,030,000 cu. ft. per day through a ⅝-in. choke from perforated casing at 7,325-30 ft. Location has been made and rig is being moved in for 1-B American Rice Milling Co., located in the same area as the extension producer. Development of the field is being resumed in conjunction with a large recycling project which is to be constructed in the near future.

ORANGE COUNTY WILDCAT.—Location for an 8,500-ft. wildcat was announced for Orange County by J. W. Frazier and others for 1 C. L. Brown, located about 5 miles south of Orange in the Lizzie Higginbotham Survey.

TEXAS GULF COAST COMPLETIONS

Brazoria County

Hastings: Stanolind 40 Curkett, 595 bbl., ¼-in. choke, perf. casing 6,068-6,104 ft., T.D. 6,106 ft.
West Columbia: Hogg 7-A Mike Hogg, 174 bbl., ⅞-in. choke, top sand 3,718 ft., T.D. 5,319 ft.
Wildcat: Stanolind 1 Vieman, dry, T.D. 9,750 ft.

Chambers County

Anahuac: Humble 19 J. E. Broussard, 202 bbl., ¼-in. choke, top sand 7,214 ft., T.D. 7,232 ft.
Barbers Hill: Humble 2-B Kirby Petroleum Co., 426 bbl., ¼-in. choke, perf. casing 4,833-53 ft., T.D. 4,853 ft.
Red Fish Reef: Humble Oil & Refining Co. 16-A-247 State, 240 bbl., 9/64-in. choke, perf. casing 8,703-08 ft., T.D. 10,423 ft.
Humble 18-A-248 State, 192 bbl., ¼-in. choke, perf. casing 10,330-46 ft., T.D. 10,368 ft.
Seabreeze: Sun 3 Seabreeze Land Co., 29 bbl., ⅞-in. choke, T.D. 8,878 ft.

Galveston County

League City: Phillips 1 J. H. Ross, 243 bbl., ⅛-in. choke, perf casing 8,695-97 ft., T.D. 9,300 ft.

Harris County

Wildcat: Pure 1 Chase National Bank, dry, T.D. 5,523 ft.
L. U. Rowntree 1 Greens Bayou Homesite Co., dry, T.D. 2,963 ft.

Hardin County

Silsbee: Republic 1 Elliott fee, 43 bbl., ⅛-in. choke, sand 6,917-23 ft.

Jackson County

Lolita: Humble 15-A L. Ranch, 20 bbl., ¼-in. choke, sand 4,271-84 ft.
West Ranch: Louis Crouch 2 W. E. Brewer, 65 bbl., 3/32-in. choke, top sand 5,621-28 ft.
Magnolia 141 West Ranch, 39 bbl., open tubing, top sand 5,771 ft., T.D. 5,774 ft.

Jefferson County

Fannett: Gulf 9 Bordages, 676 bbl., ¼-in. choke, perf. casing 8,325-37 ft., T.D. 9,054 ft.
Lovells Lake: Humble 7-B Steinhagen, 121 bbl., ⅛-in. choke, perf. casing 7,786-92 ft., T.D. 7,798 ft.
West Beaumont: Stanolind 1 Kauffman, gas well, T.D. 6,024 ft., plugged back T.D. 4,606 ft.

Liberty County

Martha: Stanolind 5-C Seaberg, 71 bbl., ⅛-in. choke, perf. casing 8,181-90 ft., T.O. 8,633 ft.
Wildcat: Charles G. Hooks 1 Lockin, dry, T.D. 9,703 ft.

Matagorda County

Blessing: Skelly 1 Yeagley, dry T.D. 9,594 ft.
Van Vleck: Skelly 21-C Cobb, 314 bbl., 5/32-in. choke, top sand 8,476 ft., T.D. 8,619 ft.

Polk County

Segno: Humble 36-Bx Kirby Petroleum Co., 60 bbl., ¼-in. choke, top sand 8,144 ft., T.D. 8,194 ft.

Walker County

Wildcat: G. W. Markel 1 T. B. Davis, dry, T.D. 2,019 ft.

Wharton County

Magnet: Humble 43 Cockburn, 54 bbl., ⅛-in. choke, top sand 5,534 ft., T.D. 5,541 ft.

TEXAS GULF COAST DRILLING REPORT

Brazoria County

Pure 1 Greenameyer, Manor Lake prospect, J. E. B. Austin Sur., S.D. 8,131 ft.
West Production Co. 1 A. M. Bell, Pearland area, H. T.&B. Sur., drilling shale 5,686 ft.
Strake 1 Griffith, Halls Bayou area, drilling shale in sidetracked hole 9,912 ft.

Fort Bend County

J. G. Mayo et al 2 Armstrong, Needville area, J. Scott Sur., drilling shale 5,485 ft.
Providence Oil Co. 1 Hatfield, Clodine area, H. D. Brown Sur., R.U.

Waller County

Kirby 1 Donigan, Brookshire area, John McFarland Sur., T.D. 6,228 ft., heaving shale, washing to bottom.

Wharton County

Lon Cron et al 1 McGill, Lissie area. A. Schwartz Sur., S.D. 6,531 ft., high water.
W. R. Davis, Inc. 1 Hartman, Lake View area, I.&G.N. Sur., drilling shale 5,641 ft.
S. W. Richardson 1 J. T. Jones, S. P. Middleton Sur., S.D. 3,380 ft.

Oklahoma Fields

(Continued from Page 59)

T.D. 3,513 ft., est. 5,000,000 cu. ft. gas and salt water, deepened to 3,531 ft., filled up 2,200 ft. with water, to P.B. to 3,508 ft., Seminole County.
2-11-10, NE NE NW ..... Sunray 1 Brooks First report, Okfuskee County.
14-11-10, NW SW NW ..... Alma 1 Replogle T.D. 3,198 ft. in lower Cromwell, flowed 30 bbl. oil and 90 bbl. water, est. 3,000,000 cu. ft. gas, testing, Okfuskee County.
16-12-5, NE SW NE ..... Morgan-Gulf 1 School Brown lime 4,235 ft., Mississippi Caney 4,420 ft., Mayes 4,535 ft., drilling 4,740 ft., Lincoln County.
15-12-9, NW SE NW ..... Texas 1 Butcher T.D. 4,048 ft., P.B. 3,323 ft., hole caved, recement plug, Okfuskee County.
16-12-10, NE NW SW ..... Weimer 1 Williams Oswego 1,180 ft., Calvin 1,210 ft., Inola 2,245 ft., salt sand 2,295 ft., Brown lime 2,485 ft., Booch 2,665-90 ft., Wapanucka 3,085 ft., some show oil, cored stained sandy lime 3,090-3,100 ft., drilling 3,105 ft., Okfuskee County.
16-13-16, NW SW NW ..... Stormfeltz 1 Weimer Dry sand 1,817-25 ft. and 1,850-53 ft., S.D. 2,060 ft., Muskogee County.
20-14-9, SW SE SW ..... Burke-Greis 1 Peabody Oswego 2,289-2,310 ft., Bartlesville 2,835-2,980 ft., dry, to core at 3,255 ft., Creek County.
8-15-5, NE NE NW ..... Wilcox 1 Curry Verdigris lime 3,540 ft., Mayes 4,069 ft., electric log to 4,096 ft., S.D. 4,100 ft., Lincoln County.
23-16-3, NW NW SW Helmerich & Payne 1 Hennessey Oswego 3,860 ft., Mississippi lime 4,475 ft., Hunton 4,738 ft., Viola 4,743 ft., Wilcox 4,799 ft., no show, coring in second Wilcox, Lincoln County.
20-18-1, SE SE NW ... Anderson-Prichard 1 McGuire First report, Payne County
26-19-9, SE SE NE ..... Jackson 1 Prince Bartlesville sand broken 2,357-78 ft., some show oil, drilling 2,524 ft., Creek County.
22-21-9, SE NW NW ..... Dillard 1 Osage Bartlesville lime 2,433-47 ft., no show, Mississippi lime 2,540 ft., drilling 2,550 ft., Osage County.
18-24-8, SW NE SW NE ..... Miller 2 Osage Flowed 168 bbl. oil in 7 hr. and died, base sand 2,800 ft., T.D. 2,808 ft. in shale, to deepen to Arbuckle, Osage County.

West of the Meridian

29-2-9w, SE NW SE ..... Cooper 1-A Bowen Drilling shale 837 ft., Stephens County.
12-2-5w, SE NW NW ..... McCasland 1 Prine S.D. 2,108 ft., Stephens County.
2-5-12w, SE NW ..... Texas 2 Smith Sylvan 2,104 ft., cored green shale 9° dip 2,115-20 ft., Sylvan dolomite 2,240 ft., to core, Caddo County.
13-7-2w, SE NW NE ..... Delaney 1 Montgomery Oread 4,425 ft., Belle City 5,085 ft., Checkerboard 5,535 ft., drilling 6,360 ft., Cleveland County.
30-7-17w, NW NE SE ..... Artie Baker 1 Coakley T.D. 1,287 ft., swab 1 bbl. oil an hr. and 3 bbl. water, S.D., Kiowa County.
17-15-3w, SW SE SW ..... Continental 1 Lenigar 7-in. 4,720 ft., T.D. 4,747 ft., filled up est. 15 bbl. oil an hr., S.I. for tanks, Payne County.
29-28-1w, NE NW NE ... Helmerich & Payne 1 Geiger Cored dry sand and dolomite 3,594-99 ft., cored hard tight sand with trace dead oil 3,599-3,612 ft., T.D., S.D., Kay County.

Woodbine Test in Navarro Co. May Open Fault Line Pool

By R. MARNE SANFORD

DALLAS, Tex., Apr. 28.—Continuing the increasingly active wildcat drilling program throughout the eastern Texas district, a total of six new exploratory tests were either staked or planned during the past week. Holding some attention in Navarro County was the possibility of a new Woodbine sand field along the Balcones fault system and just south of the Bazzette field in the same county.

New Wildcats

UPSHUR COUNTY.—Closely following the failure of one deep wildcat test in Upshur County came the staking of another. Sun Oil Co. quit its deep test, 1 Henderson, Asher Survey, Ore City area, at a total depth of 7,923 ft. with no shows reported. The Travis Peak section was topped at 7,808 ft.

The new operation is L. S. Buchanan 1 D. G. Robinson, on a 167-acre tract in the John Sanders Survey, just northeast of the town of Big Sandy. Spudding is set for May 5, with the contract depth being 5,000 ft. or the Woodbine sand.

RED RIVER COUNTY.—In the northern part of Red River County, west of Manchester, George C. Foster, Oklahoma City, has staked 1 W. F. Edmondson, on a 100-acre tract in the Perkins Survey. The operator has about 2,500 acres in the area and plans call for a series of shallow-sand tests. Contract depth of the first operation was not mentioned.

ANDERSON COUNTY.—New wildcat for Anderson County was reported planned by Karns & Quick on a 3,702-acre block northwest of Bushy Creek. It was reported the operators were to spud in within 90 days from April 9.

FREESTONE COUNTY.—Rogers Stewart and Carter-Gragg Oil are reported planning a Woodbine sand wildcat test in Freestone County and about 5 miles northwest of Oakwood. The company has taken a block of leases on the north and west side of a block held by Arkansas Fuel Oil Co. The two block owners are reported to have negotiated for a test to be started by May 1 and to be on or offsetting the Georgetown University tract of 500 acres in the Lyons Survey.

WOOD COUNTY.—A possible Paluxy sand wildcat for Wood County is in the making by N. P. Powell on a 4,000-acre block northwest of the Hawkins field. Tentative site has been placed in the J. B. and W. Carlock tract of 235 acres in the R. D. White Survey. Starting date was not given.

Another Wood County wildcat projected to the Woodbine sand is being considered by R. W. Fain, Tyler, on a 3,000-acre block assembled by T. C. Vaughn. The block is through the Sarah English, William Page, G. W. Terrell and other surveys, and was taken subject to a test by May 1 of this year.

Possible Navarro Discovery

A new discovery was indicated by L. T. Davis 1 Davis, T. J. Jordan Survey, 1 mile southwest of the Woodbine sand producing Bazzette field of northern Navarro County. The test topped the Woodbine sand at 3,038 ft. and drilled to 3,086 ft., total depth, corrected to 3,083 ft. An electrical survey indicated possible oil sand from 3,080-83 ft. in the last 3 ft. of hole. Location is near the center of a 2,000-acre block held by A. J. Deskin and in an area where several dry holes have been drilled. Casing was being cemented at the close of the week and testing will start early the coming week.

EAST TEXAS FIELD COMPLETIONS

Gregg County

Longview area: General American 33 Adams, 40 bbl. in 30 min., 3,608-24 ft.
L. & G. Oil 2 Lee, 33 bbl. in 45 min., 3,570-78 ft.
N. P. Powell 2 McKinley, abandoned location.
Tide Water 3 Anderson 21 bbl. in 30 min., 3,616-21 ft.
Kilgore area: Gross & Schulman 5 Walker, dry at 3,614 ft.
Houston Oil 9 Hughey, 20 bbl. in 20 min., 3,484-3,536 ft.
J. J. Jenkins 4-B King, 17 bbl. in 45 min., 3,545-80 ft.
C. C. Julian 11 England, 24 bbl. an hr., 3,538-69 ft.
J. E. Kemp 13 King, 100 bbl. in 4 hr., 3,531-68 ft.

SUMMARY OF COMPLETIONS

(One-hour gages)

East Texas Field

	No.	Bbl.	Footage
Oil wells: Longview area	3	166	10,823
Kilgore area	7	229	24,969
Dry holes: Kilgore area	1	.....	3,614
Joiner area	1	.....	3,540
Total	12	.....	42,946

East Central Texas

Oil wells: Hawkins	9	3,122	43,345
Talco	2	251	8,551
Other	1	8	3,976
Wildcats	1	365	5,387
Gas wells: Grapeland	1	*110	5,966
Dry holes: Fields	1	.....	2,733
Wildcats	1	.....	7,923
Total	16	.....	77,881

*Million cu. ft.

J. E. Kemp 14 King, 20 bbl. in 45 min., 3,535-68 ft.
Potter Bros. 4 Crane, 20 bbl. in 45 min., 3,535-68 ft.
Shell 96 Watson, 22 bbl. in 30 min., 3,512-80 ft.

Rusk County

Joiner area: Oran Lavey 3 Hale, abandoned location.
Texas Canadian Oil 4-A-B Fredrick, junked at 3,540 ft.

Upshur County

Longview area: Mudge Oil 2 Shelton, 21 bbl. in 30 min., 3,728-37 ft.

EAST CENTRAL TEXAS FIELD COMPLETIONS

Anderson County

Cayuga: Ce-Beth Oil 3 Royal & Cone, 8 bbl. daily, perf. casing 3,972-76 ft.
Wildcat: Tex-Harvey Oil 1 Cartmell, E. Ewing Sur., 2 mi. NE of Long Lake field, 365 bbl. daily, ¼-in. choke, top Woodbine 4.945 ft., T.D. 5,387 ft.

Franklin County

Talco: Magnolia 4 Rutherford, 51 bbl. daily, flowing, 4,231-40 ft.

Houston County

Grapeland: Greir Bros. & Jackson 1 Dailey, 110,000,000 cu. ft. gas daily with 30 bbl. distillate per 1,000,000 cu. ft. gas, perf. casing 5,955-61 ft., T.D. 5,966 ft.

Limestone County

Tehuacana: Zephyr Oil 3 Yelverton, dry at 2,733 ft.

Titus County

Talco: Humble 4 Temples, 52 bbl. in 4 hr., flowing, perf. casing 4,302-11 ft.

Upshur County

Wildcat: Sun Oil 1 Henderson, NW cor. 27-acre tract in 100-ac. tract in Robertson Asher Sur., at town of Ore City, top first anhydrite 6,079 ft., second anhydrite 6,676 ft., base massive anhydrite 6,924 ft., dry at 7,923 ft.

Wood County

Hawkins: Bracken Oil 1 Goodson Jr., 119 bbl. in 6 hr.,

(Continued on Page 64)

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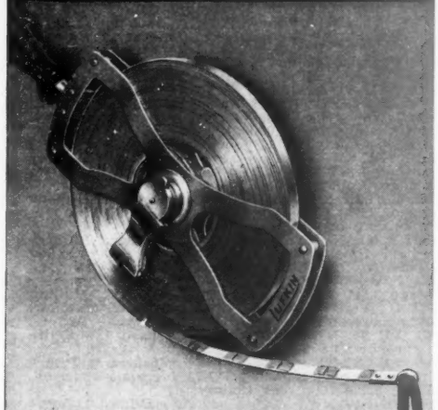

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Development of Resources of Public Domain Is Planned

By T. R. INGRAM

DENVER, Colo., Apr. 28.—Western oil men will seek to have hearings by a congressional committee on utilization of mineral resources on the public domain held in the Rocky Mountain area.

Plans for the drilling of two deep tests to the Devonian in Montana announced this week were outstanding wildcat developments. One is a 10,000-ft. test on the Baker-Glendive fold and the other a 6,500-ft. test in the Cat Creek district.

SUMMARY OF COMPLETIONS

Wyoming

	No.	Bbl.	Footage
Oil wells: Recompletions, fields..	3	1,675	.....
Montana			
Oil wells: Cut Bank	2	250	5,802
Gas wells	3	*2.5	2,700
Total	5	.....	8,502

*Million cu. ft.

Extension of the oil-producing area of the Powder Wash field in Colorado is imminent in Mountain Fuel Supply 3 Musser, which showed for around 200 bbl., but is drilling deeper.

Colorado had one new wildcat starting in Columbia Heights district, Pueblo County.

Lance Creek had two recompletions in Ohio 7 Converse Sheep for 1,200 bbl., and Continental 6 Otto Rohlff for 375 bbl. Stanolind 6 Rosenberg, a recompletion in the Frannie field, made 100 bbl. on the pump.

Cut Bank had two completions, Santa Rita 3 Jordan for 220 bbl. and Glacier Production 2 Federal Land Bank, a small well not tested.

Montana-Dakota completed three small gas wells in the Bowdoin field.

COLORADO

Senate Resolution 53, which provides for an investigation of mineral resources on the public domain, has been reported out by the Senate public-lands committee at Washington with the recommendation that it be passed. Its passage, as a result of the favorable action, is considered certain. Western oil men operating on the public domain anticipate the conducting of hearings with direct reference to petroleum as well as other minerals, and are taking steps to have these scheduled for the centers in the public-land states. H. Leslie Park, of Denver, for himself and associates, has taken the matter up with Sen. Joe C. O'Mahoney, of Wyoming, and suggested that hearings be conducted in Casper, Denver, Albuquerque and other points in this territory. The investigation will have for its purposes the providing for more effective development and utilization of resources on the public domain for such purposes as national defense, fostering free competitive enterprises, etc.

Jefferson County

Ruby Hill 1 Braden.....SE SE SE 24-4s-69w
T.D. 4,814 ft., cleaned out to bottom and lowered 4¾-in. to 4,804 ft., show of oil.

La Plata County

E. B. Klem 1 Olbert.....NW SW 9-35n-12w
S.D. 4,050 ft., account weather.
Nick Spatter 1-X Bryce.....SW SW 31-33n-9w
S.D. 4,428 ft. (cor. depth).

Moffat County

An important extension of the oil-producing horizon in the Powder Wash field appears to be imminent in the Mountain Fuel Supply 3-A Musser, 1 mile south of 1 Stewart, and ¾ mile southwest of 1 Musser, the discovery well. It had a sand at 5,270-83 ft. which was estimated capable of producing 200 bbl. a day, but drilling deeper is continuing. It is now going ahead at 5,349 ft.

Mountain Fuel Supply 7 Florence Wilson, East Hiawatha, is cementing off the first Wasatch sand which tested 55 bbl. of oil and 1,000,000 cu. ft. of gas through perforations and will complete in the second sand at 2,257-2,341 ft. It is estimated at 250 to 300 bbl. initial from this horizon. The first sand was shut off to conserve the gas.

Pueblo County

E. A. Scriven 1 Kieffer.....SE SW 21-21s-66w
Drilling 100 ft., first report, Columbia Heights district.

WYOMING

Carbon County

Sinclair-Wyoming has made a location for 23-A Wertz, a south offset to 22-A Wertz, a drilling well. Both are across the line in Sweetwater County, but carried under Carbon County for convenience of readers.

Sinclair-Wyoming 23-A Wertz..NE NE NE 12-26n-90w
Cellar, first report.
Sinclair-Wyoming 17-A Wertz...NE NE NW 7-26n-89w
Drilling 6,118 ft. in Tensleep, top 5,899 ft.
Sinclair-Wyoming 19-A Wertz....SE SW SW 6-26n-89w
Cemented 7-in. at 5,828 ft., top Tensleep 5,826 ft.

Natrona County

Casper Creek Oil 1 State.....SW SW NW 36-36n-81w
T.D. 2,386 ft., running 5⅛-in.
Investors Oil 32 Government....SE SE NE 3-33n-89w
Drilling 2,448 ft. in Tensleep, 7-in. at 2,437 ft.
K. S. Albert 1 Young.....NE SE 25-32n-82w
Drilling 447 ft.

Niobrara County

Lance Creek had two recompletions. Ohio 7 Converse Sheep, C NW SE 32-36n-65w, flowed 1,200 bbl. first 24 hours at 5,385 ft., total depth, from the Leo through 107 perforations at 5,160-5,240 ft. It was originally completed in the Sundance at 3,720 ft. in 1935 for 2,604 bbl.

Continental 6 Otto Rohlff, C SW SW 32-36n-65w, which has not been carried in these reports, was recompleted at 5,450 ft., old total depth, for 375 bbl. of oil and 80 bbl. of water from the third Leo sand. It was originally completed last month for 133 bbl. of oil and 825 bbl. of water and then went entirely to water. The fourth Leo was cemented off and well recompleted as above reported.

Park County

Stanolind Oil & Gas 6 Rosenberg, NW NW NW 25-58n-98w, Frannie field, was recompleted at 2,820 ft. in the Tensleep for 100 bbl. in 24 hours on the pump. It was originally completed at 2,747 ft. in 1934 for 108 bbl. in 6 hours.

Deepening has begun on 24 Rosenberg, completed in 1931 at 3,001 ft. for 500 bbl. on the pump.

Stanolind 24 Rosenberg.....NE SE NE 26-58n-98w
Drilling 3,032 ft.
Texas Co. 5 Sonners.....SE NE NE 30-51n-100w
Location, first report, Oregon Basin field.
Enalpac 3 Pauline O.P.C.-1....SW SE SE 5-51n-100w
Drilling 3,618 ft., top Embar 3,377 ft.

Sublette County

Marvel Oil 1-L Government....SE SE SE 28-27n-113w
Spudded.
Charles Lackey 1 Government NE SE SW 33-27n-113w
S.D. 1,650 ft.

Sweetwater County

Rocky Mt. Drlg. Co. 1 State..SW SW SW 36-20n-104w
Drilling 5,411 ft. in red beds, showed some gas and sulfur water.
Sinclair-Wyoming 96-A.....NE SE NE 10-26n-90w
Drilling 3,980 ft.

MONTANA

Fallon County

Location for the deep test to be drilled by the Carter Oil Co. on the Baker-Glendive anticline in eastern Montana is C SE SW 19-4n-62w, and will be known as 1 Northern Pacific unit. Contract has been let to the Noble Drilling Co. and hole will be carried to 10,000 ft. unless commercial oil or gas is discovered above that horizon. The location is 2 miles southwest of Montana-Dakota Utilities 1 unit, NE NE NW 17-4n-62e, the discovery well, which was drilled to 8,186 ft. in 1936 and was completed in what was reported to be the Mississippian lime. Its production was not revealed, but it was estimated at 200 to 300 bbl. a day. The lease block comprises around 120,000 acres and the Montana-Dakota company will receive 25 per cent net proceeds from development. Contract covers oil or gas development below the 2,000-ft. horizon.

Carter Oil 1 Northern Pacific unit..C SE SW 19-4n-62e
Moving in, first report.

Garfield County

The California Co. has contracted with the Arro Oil & Refining Co. to take over its 4 Charles, C SE NW 21-15n-30e, on the Mosby dome, in the southeastern part of the Cat Creek field and deepen it for a test of the Devonian at around 6,500 ft. The well was drilled to 3,545 ft. last year and stopped in the top of the Madison lime. It had saturation at 3,523-28 ft., followed by water at 3,528-34 ft. This will be the first deep test drilled in that part of the field, and was the first to reach the top of the Madison. It was through the third Cat Creek sand in the Lower Cretaceous at 1,150 ft., where the 10¾-in. was cemented.

Glacier County

Cut Bank had two completions and two new operations. Santa Rita Oil & Gas 3 Jordan, C SE NE 7-32n-5w, in the south field, swabbed 220 bbl. first 16 hours at 2,960 ft., total depth, from the Cut Bank sand at 2,891-2,959 ft. The main pay was at 2,945-59 ft., the oil rising 2,000 ft. in the hole. There was no Sunburst sand.

Glacier Production 2 Federal Land Bank, C SE SW 30-34n-5w, had 300 ft. of oil in the hole at 2,842 ft. from the Cut Bank sand at 2,803-36 ft., but was not given a swabbing test. Main pay was at 2,830-36 ft. The Sunburst at 2,745-80 ft. had a show of oil at 2,750-60 ft., and the 7-in. was set at 2,770 ft. and 86 ft. of perforated 5⅛-in. liner was landed at 2,842 ft.

Glacier Production 10 State, 440 ft. N of C of S line SW 16-33n-5w, building rig, first report.
Santa Rita 6 Govt.....C SW NW 8-32n-5w
Rigging up, first report.
Hannah-Porter 2 Tribal-189.....SE SE SE 19-32n-5w
Building rig.
Glacier Prod. 3 Connelly.....C SE SW 6-33n-5w
Spudded.
Texas 2 Jones.....C NE SW 6-33n-5w
Spudded, (cor. loc.).
Montana Headlight 4 Williams..SW SW NE 11-34n-6w
Spudded.
Kullberg Oil 2 Tribal-185.....NW NW NW 19-32n-5w
Drilling 900 ft.
Glacier 4 Lookhoff.....SE SW SE 33-33n-5w
Drilling 1,215 ft., set 10¾-in. at 590 ft.
Ed Reagan 1 Tribal-194.....CEL SE NE 22-37n-7w
T.D. 3,869 ft., preparing to acidize.

Hill County

Cobb-Yale 1 Government.....C SW NE 19-37n-15e
Resumed with rotary.

Toole County

Rimrock Production 7 Schmidt CSL SE NW 29-35n-3w
Drilling 980 ft., first report.
C. Leonard Smith 1 Lewis.....NE SW NW 34-33n-2e
Spudded, first report, Devon field.
High Gravity Oil 2 Horner CSL NE SW 18-35n-3w
T.D. 180 ft., cemented 8¼-in.
Big West 5 Ellingson.....CSL SE SW 14-35n-3w
T.D. 1,005 ft., cemented 8¼-in.
Ohio 7 Howling.....NE NE SE 10-35n-2w
Drilling 1,603 ft.
Dunkirk Adventure 1 McKechnie..NW SW SE 2-31n-1w
T.D. 960 ft., cemented 10-in.
Colonel Kevin 9 Govt.....C NE NW 27-35n-3w
S.D. 1,777 ft., contact at 1,725-55 ft., dry.

Valley County

Montana-Dakota Utilities had three completions in the Bowdoin gas field. No. 646, C NE NE 23-31n-34e, was completed in the base of the Colorado shale, depth not reported, for 734,000 cu. ft. of gas.

Same company's No. 645, C NE NE 15-31n-34e, was completed at 770 ft. for 769,000 cu. ft. through 5½-in. perforated liner on bottom.

Same company's No. 267, C SW SW 17-31n-34e, was completed at 1,030 ft. for 998,000 cu. ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty 2 Pajarito.....NW NE 22-9n-1e
Drilling 2,818 ft.

McKinley County

Ambrosia Investors 1 Govt..SW NW NW 14-14n-10w
Spudded, first report, Ambrosia Lakes district.

Sandoval County

Sieman & Boyd 1 Armijo.....SE SW 1-12n-3w
T.D. 815 ft., testing water shutoff.

San Juan County

Carroll & Carroll 2 Government C NW NW 12-29n-12w
T.D. 1,840 ft., 5-in. on bottom, fishing.
Red Cactus Oil 1 Tribal.....SE SE SE 35-29n-18w
Drilling 1,595 ft.

Torrance County

Orville J. Lee 1 Milburn.....C NW SW 36-7n-7e
Drilling 975 ft. in shale and sand.

San Antonio Bay Offshore Test Logs Favorable Sand Showings

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Apr. 28.—Main interest in the Southwest Texas district at the close of the week centered on Gulfboard 1-114 State, a marine operation located offshore from Calhoun County in San Antonio Bay, where preparations were being made to test several possible sands reported to have been logged by an electrical log. While all details have not been released, the electrical log is reported to have shown favorable indication at intervals from 6,200-6,325 ft., and 5½-in. casing was cemented on bottom at 6,404 ft., after several attempted drill-stem tests failed. The prospective pool opener is located about 2½ miles south of the Duck Bay field.

REFUGIO COUNTY.—In Refugio County, and located about 4,000 ft. northwest of the newly opened Woodsboro field, Southern Minerals Corp. 1 Boenig is bottomed at 6,710 ft., and casing is being cemented preparatory to testing sand just above the total depth. Drill-stem testing at 5,838-45 ft. tested gas and distillate.

AGUA DULCE.—W. B. Osborn and Mid-Continent 1 E. Burow, reported the previous week as opening gas-distillate production 2 miles northeast of the Agua Dulce field, Nueces County, is shut in after flowing at the rate of 30 bbl. of 54 amber-colored distillate per day through a ⅛-in. choke. Tubing pressure was 1,475 lb., and casing pressure 1,975 lb. Additional sands are known to have been logged by an electrical log, and the present perforations at 6,712-14 ft., may be squeezed off and additional tests made before the well is officially completed. The completion has attracted wide attention and is expected to result in an increase in activity for this particular area which already is the most active area in the Corpus Christi district, there being some 18 operations reported along the Agua Dulce-Stratton trend at the present time.

SHIELD.—In the same county, and located north of production in the Shield field, Shield Oil Co. 2-B W. L. Lewis topped the discovery pay at 6,617 ft., and on a 15-minute drill-stem test at 6,617-6,620 ft., tested 60 lb. working pressure, and recovered 1,140 ft. of pipe-line oil. Casing is being cemented for completion.

EAST PREMONT.—An important extension was recorded for the East Premont field, Jim Wells County, as Magnolia 15 Seeligson, about 3,700 ft. northwest of production, flowed 167 bbl. per day on a 5/32-in. choke from perforated casing at 5,897-99 ft. Although this structure is not fully developed, recent developments indicate that it can be classified as one of the most important fields to be discovered along the so-called Frio-Vicksburg trend.

MURALLA.—Additional development is expected to be started in the Muralla field, Duval County, following the completion of E. R. Thomas 1 Allen Parr, 1 mile east of production. Completion was made in the Pettus sand at 4,711-20 ft., and on a 24-hour gage the well flowed 52 bbl. of oil and some salt water per day on a 5/32-in. choke. Casing pressure was 1,800 lb., and tubing pressure 1,000 lb. Location is in Block 8, Survey 11. Along this same trend and located in the Chiltipin field, location for a southwest outpost was announced by the Chiltipin Oil Co. for 1 Tom Graham. Location was also made on the north side of the field for Gray & Wolfe 1-A Tom Graham in Survey 572.

SUMMARY OF COMPLETIONS

Lower Gulf Coast District

	No.	Bbl.	Footage
Oil wells: Fields	11	1,349	73,485
Gas wells: Fields	4	.....	18,170
Dry holes: Fields	1	.....	5,951
Wildcats	4	.....	23,884
Total	20	.....	121,490

Laredo District

Oil wells: Colorado	2	186	6,073
Other fields	9	865	24,445
Dry holes: Fields	3	.....	9,795
Wildcats	8	.....	29,322
Total	22	.....	69,635

San Antonio District

Oil wells: Fields	2	415	4,881
Dry holes: Fields	2	.....	5,859
Wildcats	2	.....	3,816
Total	6	.....	14,556

Wilcox Tests in Live Oak

In Live Oak County, drilling was being started on two important Wilcox tests. Near the town of Kittie and located on a geophysical block of several thousand acres, Continental Oil Co. is rigging up for 1 George West estate, a projected 8,500-ft. test located in Lot 46 in the M. Caronican Survey. On the south edge of the shallow Oakville field, drilling was being started by Henderson Coquat on 1 Regan. Wilcox possibilities in this county were enhanced by the showing of Edwin M. Jones 3-B George West near the town of George West where drilling is being resumed after the well blew out and caught fire several weeks ago.

McALLEN.—Development of the McAllen gas-distillate structure, Hidalgo County, is being resumed as material was being moved in for W. R. Davis 1 Arizona-Texas Citrus Co., Lot 1, Block T, McColl subdivision, Porcion 68. The well is being drilled on acreage recently purchased from the McCollum Exploration Co., and the location is about 7,000 ft. southeast of the discovery well. The discovery well, R. E. Hardin et al 1 E. M. Carr, located just outside of the McAllen city limits, was completed in 1938 as a gas-distillate producer at 7,425-35 ft.

Balcones Fault District

ELGIN.—In the Balcones fault-line district, and located in Bastrop County, Marts & Beaven 1-A Walker which opens a new Austin chalk field 5½ miles east of Elgin, has been officially completed for an initial production of 104 bbl. of oil plus 20 per cent salt water per day. Production is from a crevice in the Austin chalk at 2,830-50 ft. Location is in the George J. Glasscock Survey. The rig is being moved to 1 Cheney, an offset to the discovery well in the same survey. The field probably will be named "Elgin."

SOUTHWEST TEXAS COMPLETIONS

LOWER GULF COAST DISTRICT

Bee County

Wildcat: Rowe & McBride 1 Faktor, dry, T.D. 4,769 ft.

Calhoun County

Coloma Creek: McSpadden 1-B Clark, dry, T.D. 5,941 ft.

Jim Wells County

Wildcat: Arkansas Fuel 1 Frieger, dry, T.D. 5,110 ft.
J. H. Dunn 1 Hranicky, dry, T.D. 5,505 ft.

Kenedy County

Wildcat: One Hundred & One Oil Co. 2 Kenedy, dry, T.D. 8,500 ft.

Nueces County

Agua Dulce: H. H. Howell 3 Schulze, 270 bbl., ¼-in. choke, perf. casing 6,494-6,514 ft., T.D. 6,541 ft.
Union Producing 2-A Driscoll, gas well, perf. casing 4,965-85 ft., T.D. 5,695 ft.
East Flour Bluff: Humble 2-G State, 182 bbl., ⅛-in. choke, T.D. 6,791 ft.
Riverside: Stanolind 2 Thompson, 88 bbl., ¼-in. choke perf. casing 6,372-76 ft., T.D. 7,453 ft.
Saxet: North Star Oil Co. 5-E Morgan, 48 bbl., 7/32-in. choke, perf. casing 7,250-53 ft., T.D. 7,412 ft.
South Clara Driscoll: Wellington 4 Martin, 106 bbl., ⅛-in. choke, perf. casing 4,988-94 ft., T.D. 5,272 ft.
Stratton: Bay-Tex 17 Union Central Life, 87 bbl., ⅛-in. choke, perf. casing 6,572-78 ft., T.D. 6,801 ft.
Camp Drilling Co. 1 Wardner, gas well, perf. casing 6,523-36 ft., T.D. 6,588 ft.
Southern Minerals 14 Stratton Community, 103 bbl., 7/64-in. choke, perf. casing 6,398-6,426 ft., T.D. 6,617 ft.

Victoria County

Cologne: Houston 1 E. G. Schubert, gas well, perf. casing 2,835-85 ft., T.D. 2,992 ft.
Houton 2 Schubert, gas well, perf. casing 2,845-80 ft., T.D. 2,895 ft.
Heyser: Gulf 52 Traylor, 130 bbl., ⅛-in. choke, sand 5,478-85 ft.
Victoria: Bill Hardin 1 Buckert, 149 bbl., plus 10 per cent salt, perf. casing 3,079-83 ft., T.D. 3,093 ft.

Willacy County

Willamar: Pan American 1-B Community, 78 bbl., 18½ hr., 7/64-in. choke, perf. casing 7,847-80 ft., T.D. 8,722 ft.
Pan American 1 G. C. Kent, 108 bbl., ¼-in. choke, perf. casing 7,925-70 ft., T.D. 9,001 ft.

LAREDO DISTRICT

Brooks County

Wildcat: Union Oil Co. 1 Cahavana, dry, T.D. 6,652 ft.

Duval County

Charamousca: N. V. Duncan 22 Worden & Drought, 40 bbl., pumping, perf. casing 1,488-92 ft., T.D. 1,495 ft.
Magnolia 14 Duval County Ranch Co., dry, T.D. 1,961 ft.
Driscoll: Continental 64 Driscoll, 308 bbl., ¼-in. choke, perf. casing 3,358-82 ft., T.D. 3,393 ft.
Magnolia 8 Duval County Ranch Co., 125 bbl., jetting, perf. casing 1,567-69 ft., T.D. 1,569 ft.
Hoffman: Magnolia 4 Well, dry, T.D. 3,075 ft.

Jim Hogg County

Colorado: Humble 28 Atwood, 41 bbl., pumping, T.D. 3,124 ft.
Humble 30 Atwood, 78 bbl., 7/64-in. choke, T.D. 3,110 ft.
V. F. Neuhaus, 5-A Trevino, 108 bbl., ¼-in. choke, sand 2,949-63 ft.
Wildcat: Sal Vieja Oil Corp. 2 Pena, dry, T.D. 3,206 ft.

McMullen County

Wildcat: Argo Oil Corp. 1-G Edrington, dry, T.D. 3,208 ft.
Crown Central 1 Dolan, dry, T.D. 5,512 ft.

Starr County

Rincon: Continental 20-A Slick, 104 bbl., 7/64-in. choke, perf. casing 3,982-92 ft., T.D. 4,673 ft.
Kelsey: Humble 2 Juarez, dry, T.D. 4,759 ft.
Humble 82 McGill, 120 bbl., 9/64-in. choke, T.D. 4,759 ft.
Rio Grande City: Sioux Oil Co. 11 Goodrich & Wood, 12 bbl., ⅛-in. choke, sand 1,355-65 ft.

Webb County

Killam: O. W. Killam 8 Garcia, 65 bbl. fluid, 18 per cent salt water, perf. casing 1,994-98 ft., T.D. 2,030 ft.
O. W. Killam 10 Garcia, 50 bbl., pumping, perf. casing 1,997-2,001 ft., T.D. 2,037 ft.

Zapata County

Wildcat: E. C. Brogan 1 Montemayor, dry, T.D. 2,056 ft.
Dulup Oil Co. 3 Haynes, dry, T.D. 1,320 ft.
Forest Development Co. 1 Buck, dry, T.D. 2,633 ft.

SAN ANTONIO DISTRICT

Bastrop County

Wildcat: Mossart & Dixon, 1 Lentz, dry, T.D. 2,366 ft.

Bexar County

Wildcat: R. C. Stanley 1 Gembler & Tossman, dry, T.D. 1,450 ft.

Caldwell County

Bee Creek: Ralph Ogden 10-A Miears, 400 bbl., open tubing, T.D. 2,191 ft.
Tenney Creek: Elimag Oil Corp. 1 Perry, dry, T.D. 2,755 ft.
Wiegand Brothers 1 Taylor, 15 bbl., pumping, T.D. 2,690 ft.

Dimmit County

Carrizo: Ecleto Oil Co. 1 S. E. McKnight, dry, T.D. 3,104 ft.

Duval County

Wildcat: Sun 1-B Black, dry, T.D. 4,735 ft.

SOUTHWEST TEXAS DRILLING REPORT

Aransas County

Bay-Tex 2 T. O. McCulloch, deep test NE flank McCampbell, coring shale and sand 10,150 ft.
Humble 1-246 State, Red Fish Bay, coring shale 7,367 ft.

Dimmit County

Humble 1 Catarina farms, T.&N.O. Sur. 57, drilling shale 5,930 ft.

Gonzales County

Austin Brown et al 1 Voigt, T. DeCrow Sur., drilling shale 3,327 ft.

San Patricio County

Wellington 1-C J. F. Welder, SW of Odem, drilling shale 5,237 ft.

East Texas Fields

((Continued from Page 62

¼-in. choke, top Woodbine 4,387 ft., oil sand 4,568 ft., T.D. 4,820 ft.
Humble 1 Atkins, 159 bbl. in 18 hr., ¾-in. choke, top Woodbine 4,335 ft., oil sand 4,515 ft., T.D. 4,803 ft.
Humble 1 Faulk, 29.3 bbl. in 18 hr., ¼-in. choke, top Woodbine 4,396 ft., oil sand 4,563 ft., T.D. 4,808 ft.
Humble 1-A Jackson, 329 bbl. in 18 hr., ¼-in. choke, top Woodbine 4,300 ft., oil sand 4,460 ft., T.D. 4,807 ft.
Bracken Oil 1 LaForce, 110 bbl. in 6 hr., ¼-in. choke, top Woodbine 4,429 ft., oil sand 4,650 ft., T.D. 4,808 ft.
Cable Tool Drlg. Co. 1 Kay, 110 bbl. in 6 hr., ¼-in. choke, T.D. 4,822 ft., sand record not given.
J. S. King 1 King, 122 bbl. in 6 hr., ¼-in. choke, oil sand 4,580 ft., T.D. 4,807 ft.
Red Iron Drlg. 1 Allen, 115 bbl. in 6 hr., ¼-in. choke, T.D. 4,800 ft., sand record not given.
O. F. Wencker 1 Surratt, 299 bbl. in 8 hr., ¼-in. choke, top Woodbine 4,548 ft., oil sand 4,653 ft., T.D. 4,870 ft.

CANADIAN FIELDS

Turner Valley Allowables Below March Production

By VICTOR LAURISTON

CHATHAM, Ont., Apr. 26.—Crude production of 140 Turner Valley wells in March totaled 798,990 bbl. as against an authorized quota, including emergency allotment, of 780,173 bbl. Home Oil 2, North Turner Valley, was the largest producer with 28,812 bbl. for the month. Other major wells were: Home Oil 1, with 23,223 bbl.; Alberta Oil Incomes 2, with 22,015 bbl.; Home Oil 3, with 20,625 bbl., and Foothills Oil & Gas 5, with 19,909 bbl. All are in North Turner Valley. New completions in production for part of the month or on test included Anglo-Phillips 2, in the west-central field, with 1,326 bbl.; Home Oil 6, with 2,306 bbl., and Royalite 54, with 2,996 bbl.

Alberta crude production for the week ending April 14 was 26,270 bbl. a day, against 26,068 bbl. the previous week. Of this total 26,125 bbl. came from Turner Valley, and was supplemented by 905 bbl. a day natural-gasoline production. Official figures showed 143 producers in Turner Valley and 16 in other fields, with 34 wells drilling and 4 testing.

Revised crude allowable for Turner Valley for April has been set by the Conservation Board at 712,176 bbl.

Authorized production from 97 Turner Valley gas wells for April was set at 2,269,981,000 cu. ft. compared with 3,729,559,000 cu. ft. in March, in line with the board's policy of restricting gas output as nearly as possible to market demand.

North Turner Valley: Major Oil Investments 1, LSD 5, 34-20-3w5, nearing the second porous zone below 7,046 ft., more than 640 ft. in the Madison limestone.

Foothills Oil & Gas 8, LSD 12, 27-20-3w5, finished at 8,273 ft., some 678 ft. in the lime, with a good natural flow, and made 50 bbl. an hour after acidizing.

West Central section: Anglo-Phillips 2, LSD 9, 35-19-3w5, finished at 7,749 ft., after getting the lime at 7,270 ft., is making official test for allowable, with indications of around 400 bbl. a day.

Regal Royalties 1, LSD 14, 24-19-3w5, finished at 8,270 ft., 493 ft. in the lime has cleared drilling fluid and is acidizing. Independent Royalties 1, LSD 7, finished at 8,225 ft., 470 ft. in the lime, was reacidized with 4,000 gal. in the upper porous zone and increased its flow to 519 bbl. a day under heavy back pressure, with the low gas-oil ratio of 700 cu. ft. It looks like a major producer.

Okalta Oil 10, LSD 12, 18-19-2w5, finished in tight lime at 7,970 ft., flowed 200 bbl. a day with the aid of booster gas after repeated acidization. Further acid treatment in the upper zone started the well flowing under its own power, though it still looks like a small producer. Calmont-Northwest 3, LSD 4, finished at 8,060 ft., is making around 30 bbl. an hour on a gas lift, and is reacidizing and testing.

Southwest Petroleum 5, LSD 2, 8-19-2w5, got the Madison lime at 6,499 ft. and is deepening from 6,514 ft. after cementing 7-in. casing.

Royalite Oil 54, LSD 1, 7-19-2w5, finished at 7,367 ft., 431 ft. in the lime, and held up by mechanical difficulties, is testing over 350 bbl. a day and waiting for government allowable.

Southwest section: Northwest-Hudson's Bay 5, LSD 10, 8-18-2w5, is below 8,170 ft., more than 114 ft. in the Madison.

Alberta Tests

Clearwater: Clear Oils 1, LSD 8, 2-35-10w5, has encountered a gas flow, estimated 2,000,000 cu. ft. a day, at 1,745 ft., and is deepening.

Crude-Oil Prices

TEXAS FLAT-PRICE FIELDS

Alfred and Magnolia City $1.15
Continental Oil Co., 3-29-41.

Alice, Benavides (North Sweden), Ben Bolt, Clark-Mull, Sun, and Tom Graham $1.25
Humble Oil & Refining Co., 3-29-41.

Batson (new), Esperson and South Esperson (25° and above), Fig Ridge, Hardin, Hull (25° and above), La Belle, North Dayton (25° and above), Seabreeze, South China, West Orange, and Willow Springs $1.15
Sun Oil Co., 4-1-41.

Cass County $1.10
Texas Co., 3-29-41.

Cayuga, Anderson County $0.85
Pan American Pipe Line Co., 4-1-41.

Clay Creek, Washington County ... $0.90
Sun Oil Co., 4-1-41.

Cleveland, Liberty County $1.16
Magnolia Petroleum Co., 4-1-41.

Conroe, Montgomery County $1.33
Humble Oil & Refining Co., 3-29-41.
Tide Water Associated Oil Co., 3-29-41.
Sun Oil Co., 4-1-41.
Texas Co., 3-29-41.

Cotton Lake (South) $1.23
Sun Oil Co., 4-1-41.

East Texas and Flag Lake* $1.15
**Humble Oil & Refining Co.*, 3-29-41.
Pan American Pipe Line Co., 4-1-41.
Tide Water Associated Oil Co., 3-29-41.
Gulf Refining Co., 4-1-41.
Magnolia Petroleum Co., 4-1-41.
Sinclair Prairie Oil Marketing, 4-1-41.
Shell Oil Co., Inc., 3-29-41.
Sun Oil Co., 4-1-41.
Texas Co., 3-29-41.

Flour Bluff, East Flour Bluff $1.23
Humble Oil & Refining Co., 3-29-41.

Hockley and Cochran $0.77
Texas Co., 3-29-41.

Livingston $1.15
Shell Oil Co., Inc., 3-29-41.

Long Lake $1.13
Sinclair Prairie Oil Marketing, 4-1-41.

Luling $0.95
Magnolia Petroleum Co., 4-1-41.

Lytton Springs $1.07
Magnolia Petroleum Co., 4-1-41.

Salt Flat, North Salt Flat, Darst Creek*, Hilbig, Clark, Carroll, and Zoborski $1.04
Humble Oil & Refining Co., 3-29-41.
**Magnolia Petroleum Co.*, 4-1-41.
**Texas Co.*, 3-29-41.

Rincon (North) $1.25
Sun Oil Co., 4-1-41.

Sun $1.25
Sun Oil Co., 4-1-41.

Talco $0.72
Humble Oil & Refining Co., 3-29-41.
Magnolia Petroleum Co., 4-1-41.

Tomball and Satsuma $1.30
Humble Oil & Refining Co., 3-29-41.
Magnolia Petroleum Co., 4-1-41.
Stanolind Oil Purchasing Co., 4-1-41.

Van, Van Zandt County ... $0.96
Humble Oil & Refining Co., 3-29-41.
Pure Oil Co., 4-1-41.

Yates (regular) $0.85
Humble Oil & Refining Co., 3-29-41.
Gulf Refining Co., 4-1-41.
Shell Oil Co., Inc., 3-29-41.

Yates (shallow) $0.72
Shell Oil Co., Inc., 3-29-41.

MISSISSIPPI AND SOUTHEAST

Tinsley Operations at Peak As Play Swings Southwest

By GEORGE WEBER

JACKSON, Miss., Apr. 28.—Casing was set in two Mississippi wildcats showing oil last week, and interest is focused on production tests expected shortly. In addition to those two operations, in Clarke and Sharkey counties, three new wildcats were staked in Florida and Mississippi, and resumption of operations in two Florida tests again brought that state to the attention of oil operators. Tinsley continues at peak drilling activity, with important south extension locations staked.

Wildcat Prospects

SHARKEY COUNTY. — In Sharkey County British American Oil Producing Co. has set 7⅝-in. casing to total depth in 1-A Houston estate, 23-11-7w. The wildcat is the second drilled on the block, the first of which was junked because of mechanical trouble. Although the test has been drilled "tight," reliable reports are that after coring at 3,278-79½ ft., operators recovered 1½ ft. of porous saturated chalk. A second core reported taken at 3,279½-95 ft. showed no recovery in the top 2 ft., but the remainder of the core was hard lime. The missing 2 ft. may have been similar to the soft porous chalk recovered in the first core. A drill-stem test, run at 3,278-95 ft., showed 30 ft. of mud and 60 ft. of oil-cut mud, comprising about one-quarter oil, in 25 minutes. Operators then cored to 3,303 ft., total depth, and ran an electrical log which checked the top of the saturated section at 3,278 ft., the top of the Selma chalk. A production test may be expected during the coming week.

CLARKE COUNTY.—New backing by E. C. Johnston and Meridian interests have enabled Walsingham & Earles to run 5½-in. casing in the 1 School Land, a Clarke County wildcat in 16-4n-15e. The test is reported to have oil stain and odor in the Tuscaloosa at 3,739-47 ft. and 4,047-57 ft., although the show in the first section may be due to siderite staining. A test of this wildcat will also be watched with interest.

Sinclair-Wyoming Oil Co. last week staked two wildcats in Mississippi. No. 1 Pearl River Lumber Co., 28-9n-6e, Leake County, is located on a 5,000-acre block. In Yazoo County, the operator's 1 C. C. Swayze is located about 7 miles west of the Pickens field, in 23-12n-1e. Throughout Mississippi six other wildcats are active. In Lauderdale County Magnolia Petroleum ran an electrical log on 1 Culpepper, preparatory to abandoning it, but it is reported that they may deepen it from 6,010 to 8,000 ft.

Tinsley

Seven new Woodruff wells were completed at Tinsley last week, as that field continues at peak development. The southeast extension area, where nearly all current drilling is located, took on new interest last week, with the staking of the W. B. Johnson Drilling Co. 1 Logan, 1-9n-3w, a south outpost of nearly 1 mile. Other locations have been staked nearby. With the Woodruff production defined by salt water at two points along the east edge of the southeast extension area, the play is swinging south and southwest, where good Woodruff sections are encountered, and a slight uplift of the Woodruff is indicated.

Florida

The two operations of William B. Blanchard were revived last week, 1 Everglades being deepened to 1,270 ft. where a slight show of gas at 1,050-1,270 ft. shows a shut-in pressure of about 1½ lb. The same operator's 2 Everglades, a southeast offset to No. 1, is drilling below 1,007 ft. Both are located in 31-53s-35e, Dade County, near the Tamiami Trail between Miami and Tampa. Tasso V. Orr staked 1 Marion Corp. in 11-1s-20w, Walton County, last week.

MISSISSIPPI COMPLETIONS

Wildcat—Prentiss County

Home Development Co. 1 A. Allen, SW NW SE 8-7s-9e, T.D. 2,145 ft., junked.

Tinsley—Yazoo County

Gholson, Hodge & Culberson 1 Sorrell, NW NW 32-10-2, 1,200 bbl., ½-in. choke, T.D. 5,135 ft., 5½-in. casing 5,134 ft., perf. 5,018-48 ft., Woodruff zone 5,017-5,126 ft.

Hassie Hunt 2 M. Sorrell, SE NE 31-10-2, 960 bbl., ½-in. choke, T.P. 120 lb., T.D. 5,121 ft., 7-in. casing 5,102 ft., perf. 4,998-5,038 ft., Woodruff zone 4,996-5,084 ft.

W. B. Johnson Drlg. Co. 1 T. Stutts, W½ W½ 31-10-2, 1,065 bbl., ½-in. choke, T.P. 160 lb., C.P. 210 lb., T.D. 5,080 ft., 5½-in. casing 5,076 ft., perf. 4,935-5,011 ft., Woodruff zone 4,935-5,011 ft.

Sample & Falvey 1 T. Germany, SE SE 19-10-2, 768 bbl., ½-in. choke, T.P. 80 lb., T.D. 5,087 ft., 7-in. casing 5,086 ft., perf. 4,943-68 ft., Woodruff zone 4,943-5,049 ft.

Union Producing Co. 1 N. Berry, SE NW 25-10-3, 660 bbl., ⅞-in. choke, T.P. 50 lb., C.P. 150 lb., 7-in. casing 4,979 ft., perf. 4,620-54 ft., Woodruff zone 4,622-53 ft., T.D. 4,981 ft.

Union Producing Co. 18 Stevens, SE NE 12-10-3, pumped 347 bbl., T.D. 4,933 ft., 7-in. casing 4,929 ft., Woodruff zone 4,858-94 ft.

Union Producing Co. 2 Stutts, SW SW 30-10-2, 408 bbl., ¼-in. choke, T.P. 180 lb., C.P. 230 lb., T.D. 5,077 ft., perf. casing 4,886-4,922 ft. and 4,932-62 ft., Woodruff zone 4,886-4,965 ft.

ALABAMA COMPLETION

Wildcat—Colbert County

Mellen & Gear 1 Alsobrook, S½ SW NW 10-4s-15w, T.D. 1,679 ft., dry.

William M. Barret, Inc.
Consulting Geophysicists
Specializing in Magnetic Surveys
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.
GIDDENS-LANE BUILDING -:- SHREVEPORT, LA.

Mahoning County Test Has Small Gas Show in Clinton

By STAFF CORRESPONDENT

NEWARK, Ohio, Apr. 28.—An important Mahoning County test, Magnolia 1 Della Shrum, Section 4, Smith Township, is shut down at 5,020 ft. Cleaning out hole after shooting a 40,000-cu. ft. gas showing at 4,872 ft. in the Clinton, top of which was logged at 4,846 ft. The showing was increased to 260,000 cu. ft. but blew down to 57,000 cu. ft. in 17 hours. The Newburg also had a 40,000-cu. ft. showing of gas at 4,478 ft.

In Wayne County, Wooster Township, Ohio 8 J. H. Armstrong is drilling in the Trenton at 5,290 ft.

The deep test on the lower end of the Cambridge arch in Washington County, Warren Township, by Carl Ross et al logged the Berea horizon at 2,047-52 ft. The formation was hard and the well is now drilling at 2,340 ft. The elevation of the test is 910 ft. It is located on the Charles Ammon tract, Section 23, Warren Township.

Activity continues in the Newark field in Licking County with four fair gas wells reported, the best one gaging 2,500,000 cu. ft. A Perry County oil well made 179 bbl. the first 24 hours after shot.

In Columbiana County, southeast Ohio, the Natural Gas Co. of West Virginia is drilling a test on the W. Watson farm, Section 25, Wayne Township, which is scheduled for the Oriskany sand. The surface elevation is 1,155 ft. It has reached 2,700 ft.

SUMMARY OF COMPLETIONS

Ohio

	No.	Bbl.	Footage
Oil	12	338	19,128
Gas	13	*8.8	22,187
Dry	14	.....	21,750
Total	39	.....	63,065
Input wells	6	.....	2,620

Indiana

Oil wells	2	170	5,419
Gas wells	1	*0.75	1,247
Dry holes	3	.....	5,500
Total	6	.....	12,166

Western Kentucky

Oil wells	2	120	1,525
Dry holes	2	.....	2,541
Total	4	.....	4,066

*Million cu. ft.

OHIO COMPLETIONS

Ashland County

Lake Township: Lyons Co. 3 D. G. Chandler, Sec. 10, dry, no Clinton sand, T.D. 3,085 ft.
Roy Stewart 1 Harmon Shearer, Sec. 14, dry, Clinton, T.D. 3,000 ft.
Perry Township: Price et al 5 J. E. Harpster, Sec. 17, 30 bbl., shot, Berea, T.D. 759 ft.
Alleghany Dev. Co. 2 J. J. Harris, Sec. 17, Berea, T.D. 815 ft.

Athens County

Bern Township: Bern Oil & Gas Co. 2 Paul Wogan, Sec. 18, 400,000 cu. ft. gas, second Cow Run, T.D. 835 ft.
Canaan Township: D. T. Orndoff 2 A. P. Linscott, Sec. 16, 50,000 cu. ft. gas, shot, second Berea, T.D. 1,414 ft.
Columbia Carbon Co. 1 M. M. Poston, Sec. 11, dry, second Cow Run, T.D. 770 ft.
Rome Township: J. Wickens 1 A. J. Lucas, Sec. 16, 640,000 cu. ft. gas, Maxon, T.D. 859 ft.
York Township: Ohio Fuel 193 Sunday Creek Coal Co., Sec. 32, dry, Injun (water), T.D. 560 ft.

Belmont County

Union Township: Wiser Oil Co. 1 Wm. Walker, Sec. 32, dry, Berea, T.D. 1,617 ft.

Fairfield County

Berne Township: City Natural 1 J. Brown, Sec. 10, 100,000 cu. ft. gas, Clinton, T.D. 2,215 ft.

Guernsey County

Liberty Township: Jewell Co. 1 H. S. McCullough, Sec. 14, dry, no Gordon, T.D. 1,834 ft.

Hocking County

Ward Township: Ohio Fuel 195 Sunday Creek Coal Co., Sec. 16, 400,000 cu. ft. gas, Berea, T.D. 963 ft.

Knox County

Union Township: Upham Gas Co. 1 Ambra Biggs, Sec. 4, 20 bbl., 100,000 cu. ft. gas, shot Clinton, T.D. 2,868 ft.

Licking County

Mary Ann Township: C. A. Davis 3 Elmer Lothes, Sec. Sec. 16, 840,000 cu. ft. gas, Clinton, T.D. 2,610 ft.
Newark Township: McCloy, Inc. 1 Isaac Wilson, first quarter, 2,500,000 cu. ft., Clinton, T.D. 2,400 ft.
Kundtz-Hulse, Inc. 1 F. C. Keckley, first quarter, 500,000 cu. ft. gas, shot Clinton, T.D. 2,415 ft.
Newton Township: Allen Willey 2 Levi Lynn, Lot 5, first quarter, 800,000 cu. ft. gas, Clinton, T.D. 2,644 ft.

Lorain County

Penfield Township: Wiser Oil Co. 1 Dudley West, Lot 28, 300,000 cu. ft. gas, shot, Clinton, T.D. 2,482 ft.

Medina County

Chatham Township: Preston Oil 2 M. W. Whitman, Lot 6, Tract 5, dry, Berea, T.D. 548 ft.
Marine Trust Co. A-20 Wm. P. Wertz, Tract 14, Lot 5, 5 bbl., Berea grit, T.D. 429 ft.
Marine Trust Co. O-30 Wm. P. Wertz, input, Berea T.D. 482 ft.
Marine Trust Co. A-45 Carl G. Packard, Tract 14, Lot 4 ,5 bbl., Berea, T.D. 411 ft.
Marine Trust Co. A-46 Carl G. Packard, 5 bbl., Berea, T.D. 415 ft.
Marine Trust Co. A-47 Carl G. Packard, 5 bbl., Berea, T.D. 447 ft.
Marine Trust Co. O-53½ Carl G. Packard, input, Berea, T.D. 402 ft.
Marine Trust Co. O-54 Carl G. Packard, input, Berea, T.D. 454 ft.
Marine Trust Co. O-60 George W. Packard, Tract 14, Lot 3, input, Berea, T.D. 400 ft.
Marine Trust Co. O-61 George W. Packard No. 2 west, input, Berea, T.D. 419 ft.
Marine Trust Co. O-62 George W. Packard No. 2 west, input, Berea, T.D. 463 ft.

Meigs County

Rutland Township: Wilford et al 3 C. A. Swick, Sec. 19, dry, Maxon, T.D. 745 ft.
Nolan Shuster 3 Arthur Nelson, Sec. 22, 1,660,000 cu. ft. gas, Maxon, T.D. 962 ft.

Monroe County

Franklin Township: Hines et al 1 J. Hawkins, Sec. 2 3 bbl., shot, Berea, T.D. 1,928 ft.
Wayne Township: Paulus et al 2 Mary Strauch, Sec. 27, 10 bbl., 50,000 cu. ft. gas, shot, Injun, T.D. 1,610 ft.

Morgan County

Union Township: William et al 1 H. Carter, Sec. 12, dry, second Berea, T.D. 1,425 ft.

Noble County

Seneca Township: C. W. Rich et al 1 Johnson Rich heirs, NW Sec. 31, dry, Berea grit, sand badly broken, T.D. 1,539 ft.
Beaver Township: Yoker Valley Co. 1 C. B. Denius, Sec. 23, 150,000 cu. ft. gas, shot, Berea, T.D. 1,609 ft.

Perry County

Clayton Township: Preston Oil 1 Mary Yarger, Sec. 5, 179 bbl., shot, Clinton, T.D. 3,366 ft.
Crude Oil Co. et al 2 Maddox heirs, SW Sec. 9. 70 bbl. and 50,000 cu. ft. gas, Clinton sand, T.D. 3,370 ft.
Harrison Township: Floyd W. Hull et al 1 Conaway heirs, NW Sec. 28. 3 bbl. pumper before shot, Clinton sand, T.D. 3,315 ft.

Stark County

Plain Township: Colonial Oil Co. 2 Forest Hill Cemetern Assn., Sec. 20, dry, Berea, T.D. 730 ft.

Wayne County

Franklin Township: Ohio Fuel 1 E. R. Rumbaugh, Sec. 22, dry, Clinton, T.D. 3,585 ft.
Sugar Creek Township: Peaker & Nohe 1 Frances Wood, Sec. 23, 320,000 cu. ft. gas, Berea, T.D. 779 ft.

Washington County

Aurelius Township: Thomas Bingham 1 A. J. Longfellow, Sec. 7, 3 bbl., shale, T.D. 210 ft.

Wyandot County

Crane Township: W. A. Sage et al 1 Mrs. Charles Roth, Sec. 20, dry, Trenton, 1,447-97 ft.

INDIANA

EVANSVILLE, Ind., Apr. 28.—Another Gulf Refining Co. wildcat in Posey County, 1 Aldrich Community, SE NE NE 8-6s-14w, Lynn Township, appeared dry in the St. Louis last week at a total depth of 3,106 ft. A McClosky core from 3,002-09 ft. also failed to carry saturation. The St. Louis lime was topped at 3,096 ft.

Despite many recent failures, Gulf Refining Co. is preparing to carry on its search for new oil-producing areas in Posey County. Location was staked last week at 1 W. V. Juncker, SW SW SW 13-6s-13w, about ½ mile northeast of Bufkin, in Black Township.

Unexpected sand saturation was cored at 1,630-41 ft. last week at Gulf 1 Levin Blackburn, NE NE SE 23-6s-13w, and a 1-hour drill-stem test showed 50 ft. of oil. The 1 Levin Blackburn is just north of Gulf 1 William Schreiber which is being completed in the Cypress sand for an estimated 25 bbl. daily. At the end of the week, drilling was progressing below 1,700 ft. at 1 Levin Blackburn.

INDIANA COMPLETIONS

Gibson County

Griffin pool: Papoose 17 Cooper-A, SE NE SW 13-3s-14w, swabbed 150 bbl. through casing, natural, perf. 2,532-44 ft., T.D. 2,880 ft., P.B. 2,549 ft.
South Griffin pool: Continental 6 Kleiderer, NW SE SW 26-3s-14w, pumped 20 bbl., 20-qt. shot 2,564-76 ft., T.D. 2,539 ft.

Knox County

Wildcat: S. C. Yingling et al 1 Schneck, S½ SE SW NE 10-1s-12w, dry, T.D. 2,373 ft.

Porter County

Wildcat: F. Jablonski 1 Pluta, SW NW SW 27-37n-5w, dry, Trenton 1,037 ft., water 1,247 ft., T.D. 1,247 ft.

Pike County

Iva pool: Southwestern Dev. Co. 1 Doads, SE SE SW 19-1n-6w, 750,000 cu. ft. gas, R.P. 250 lb., gas 714-18 ft., T.D. 718 ft.
Oakland City pool: P. W. Harr et al 1 Burnett, SW NW NE 26-2s-8w, dry, T.D. 1,880 ft.

INDIANA DRILLING REPORT

Crawford County

Reece-Dietz et al 1 Esarey .....NE NW NE 36-3s-1w
T.D. 410 ft., fishing tools.

Daviess County

D. L. Norris et al 1 Hunter.....SW SE NW 4-2n-5w
T.D. 190 ft., fishing tools.

Gibson County

Mabee 1 Helm ..... SW NW NW 27-3s-14w
T.D. 2,886 ft., McClosky 2,850-59 ft., tight, 2,872-80 ft., porous, acidized 2,850-59 ft., flowed 602 bbl. in 18 hr., probably from lower break through perf. in upper.
W. C. McBride et al 1 Blood .. SE SE NE 28-3s-14w
T.D. 2,950 ft., Ste. Genevieve 2,806 ft., shows 2,909-19 ft., 2,887-2,900 ft., will perf. and test.
Oleum Pet. Corp. 1 Curd....SE NW NW SE 5-2s-8w
Location, first report.

Greene County

Midwest et al 1 Good .....W½ NE NW 21-6n-7w
St. Louis 1,065 ft., drilling 1,350 ft.

Perry County

H. E. Pollock 1 J. F. Heck.....SE SE SE 16-7s-3w
Running 5-in. in H.F.W.

Posey County

C. A. Lynch et al 1 Schmuch SW NE SW 23-6s-13w
First report, building rig.
Johnson O. & R. et al (was Voorhees et al) 1 Spencer SE SE SE 26-7s-15w
Set 10-in. 146 ft., drilling 1,500 ft.

Spencer County

I. A. Paulhamus 1 Grass ....SW NE SE 11-6s-4w
Set 10-in. 23 ft., drilling 575 ft.
Troy Refg. 1 Grass ..... SW NW NW 12-6s-14w
Rigging up machine.
Texas 1 Scamahorn.....SW NE NW 29-7s-6w
Spud.
Ladmer et al 1 Cokes.....N½ SE NE NE 12-7s-8w
Drilling 580 ft.
Louis Wade et al 1 Squire.....SE SW SW 7-7s-6w
First report.

Sullivan County

W. J. Reynolds 1 Hyde.....SW NE NE 9-8n-10w
Set 6-in. 1,172 ft., slight show oil 1,184-94 ft., 1,280-95 ft., drilling 1,325 ft.
G. W. Boyce et al 1 Kelly.....SW SW NE 10-8n-11w
Drilling 1,835 ft.
Trio Drlg. 1 Ladd.....NE SW 2-7n-10w
Drilling 510 ft.

Vanderburg County

T. W. Drake 1 Nurrenbern .. SW NW NW 5-7s-11w
Set 10-in. 86 ft., drilling 280 ft.
T. W. Drake 1 Nurrenbern .... SE NE NE 6-7s-11w
T.D. 1,160 ft., rods and tubing in hole, rigging electric pumping unit.
R. A. Mitchell et al 1 Keck.....NE SW SW 6-7s-11w
Drilling 930 ft.

Vigo County

Sage & Farley 1 Campbell .. S½ NE NW 24-11n-8w
Set 6-in. 2,685 ft., drilling 2,745 ft. in dry hole.

Warrick County

Yankeetown Dev. 1 Taylor....SW SW NW 10-7s-8w
T.D. 1,455 ft., underreaming 5-in. at 1,310 ft.

EASTERN KENTUCKY

ASHLAND, Ky., Apr. 25.—Activities continued on the same level in eastern Kentucky this week with two wells reported completed but data not available today. One dry hole is included in the field reports. Recording of new leases in Lawrence County has been noted this week.

Operator Gilbert is reported to have an extra good showing in 1 Jimmie Little in Menifee County and acidization is planned within a few days. Total depth was not available.

Cumberland Petroleum has completed a key well on the L. C. Bailey farm in Magoffin County. This firm's deep test on the Bailey farm has passed the

4,885-ft. level. This well, near Oil Springs, is on the Paint Creek uplift.

Oliver Jenkins hit a dry hole in A. V. Hoenig well No. 1 on the May farm about 3 miles south of Salyersville.

Inland Gas Corp. has filed 28 oil and gas leases covering 3,450 acres of land on Caines Creek, in the county clerk's office at Louisa. Payment of 50 cents an acre per year was stipulated in the leases.

Inland officials, in commenting on the leases, said no immediate operations were planned. Inland has held acreage in Lawrence County for a number of years, they said, and there was nothing unusual in the current move. The new leases round out Inland holdings in the area and are close to the concern's pipe line. They said the leases had possibilities but no definite drilling is planned in the near future.

The leases are about 5 miles north of the Martha field of Lawrence County. Drilling operations have occurred in Lawrence County since 1904 and in recent years the Martha field has been highly developed with 200 or more wells in the area.

WESTERN KENTUCKY

McLean County

Southwest Livermore district: Hupp et al 3 Livermore Timber Co., 100 bbl., 40-qt. shot, Jett sand, 1,041-51 ft., T.D. 1,053 ft.
Nuckols district: Miller 1 A. H. Lee, dry through McClosky, T.D. 1,851 ft.
Glenville district: Cameron 1 J. F. Kerrick, 80 bbl., Cunningham sand, 1,666-76 ft., T.D. 1,702 ft., deepened from old T.D. 1,461 ft.

Ohio County

Sunnydale district: DeHart & Lykins 5 Lee Lewis, 20 bbl., 40-qt. shot, 456-72 ft.
Friendship Church district: Teller 8 A. H. Midcalf, dry, T.D. 690 ft.

Permian Basin

(Continued from Page 53)

Denver Prod. & Ref. 15-A Whittenburg, 1,026 bbl., open tubing, 10,000 gal. acid, 4,833-5,165 ft.
Oil Development Co. 16-763 fee ,1,164 bbl., 1½-in. choke, 10,000 gal. acid, 5,020-5,270 ft.
Texas Pacific Oil 7 Hall, 934 bbl., 1¼-in. choke, 10,000 gal. acid, 4,976-5,200 ft.

SOUTHEAST NEW MEXICO

Southeast New Mexico developments are featured by two newly spudded wildcat tests in Lea County.

Also claiming attention is the indication that the Grayburg pool of eastern Eddy County will be linked with the Maljamar pool, which lies chiefly in western Lea. The premise is strengthened by the gaging of Skelly 2-A Beulah V. Lynch, Eddy wildcat ⅞ mile southeast of the Grayburg pool and 1¾ miles west by northwest of the Maljamar pool, at 64 bbl. on pump.

The Skelly strike topped pay at 3,390 ft. and is bottomed at 3,430 ft. plugged back from total depth of 3,893 ft. in lime. It was shot with 110 qt. from 3,390 to 3,420 ft. and later reshot with 120 qt. in the same horizon. No. 2-A Lynch is located in SW NW 22-17s-31e.

It is reported that W. A. Sudderth and partners will not deepen from present depth of 783 ft. in 1 Neil H. Wills, Eddy gas discovery 6 miles west of the Getty pool. A gage on gas volume is planned. Before 8-in. casing was cemented the well had blown an estimated 11,000,000 cu. ft. of gas daily from Yates sand horizon. Drilling of another hole nearby to test oil possibilities in lower zones is likely. No. 1 Wills is located in NE SE 14-20s-28e.

SOUTHEAST NEW MEXICO COMPLETIONS

Lea County

Parker Drlg. 1-C Humble State, SW SW 2-22s-37e, 3,690 ft., 75 bbl.
Gulf 9 Ramsey State, SW NE 35-21s-36e, 3,856 ft., 275 bbl.
B. H. Nolen 1 Cooper, NE NE 4-20s-37e, 3,905 ft., 350 bbl.
Barney Cockburn 8-A Pearsall, SW NE 33-17s-32e, 4,010 ft., 85 bbl.
J. Cockburn 2-A Miller, SW SW 26-17s-32e, 4,170 ft., 325 bbl.
B. Cockburn 2-B Miller, SW NW 23-17s-32e, 3,802 ft., 85 bbl.
Maljamar 12-A Wm. Mitchell, SW NW 19-17s-32e, 3,960 ft., 40 bbl.

Eddy County

Danciger 11-A Turner, SE SE 18-17s-31e, 3,390 ft., 225 bbl.
Brewer 2 Williams, NW 25-18s-26e, 27½ bbl.

Canadian Franchise Sought

EDMONTON, Alta.—Negotiations are in progress between Northwestern Utilities, Ltd., and the towns of Ponoka, Lacombe and Red Deer for natural-gas franchises. The company is planning to extend its transmission lines from the Viking-Kinsella field to serve these communities.

APPALACHIAN FIELDS

Wildcatting Campaign Grows As Two New Tests Start

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Apr. 28.—Continued deep exploration in the lower eastern fields appears a certainty with a new rotary test located in West Virginia, and a cable-tool test drilling in Southeast Ohio. In Southwest Pennsylvania, more activity is promised on Chestnut Ridge.

During the past week in the lower eastern fields, 26 completions were reported of which 8 were dry, 14 gas wells, and 4 oil producers with a daily initial of 81 bbl.

SOUTHWEST PENNSYLVANIA

On Laurel Ridge in Stewart Township, Fayette County, New Penn Development Co., William E. Snee and E. G. Mueller recovered most of the dump rod of the bailer lost in the wildcat on the Gregg L. Neel farm at 8,069 ft. It was picked up with the bailer and took about 5 hours to run out of the hole. The remaining part has been successfully drilled by so that it appears as an open hole. The present depth is 8,079 ft. and the formation is turning quite dark. In Maryland these operators are recementing at 4,750 ft. in the wildcat on the Humberson farm on the Accident dome in Garrett County.

On Chestnut Ridge in South Union Township, Fayette County, New Penn Development Co. et al has whipped off the line at the socket in fishing the tools stuck in the Onondaga chert while cleaning out 1 Summit Hotel. Here, Peoples Natural Gas Co. is still straightening the hole around 4,900 ft. in 4 Piedmont Coal Co. In North Union Township, Wasson & Co. et al are drilling at 6,937 ft. in 2 J. H. Sorg with the casing set in the Onondaga lime at 6,995 ft.

SUMMARY OF COMPLETIONS

	No.	Bbl.	Footage
Southwest Pennsylvania			
Gas wells	7	*4.3	19,343
Dry holes	4	.....	8,817
Total	11	.....	28,160
Recompletions	2	*0.2	.....
West Virginia			
Gas wells: Oriskany field	3	*16.8	15,470
Other	4	*2.2	9,121
Oil wells	4	81	6,016
Dry holes	4	.....	6,507
Total	15	..	37,114
Recompletions	3	*0.8	.....

*Million cu. ft.

SOUTHWEST PENNSYLVANIA COMPLETIONS

Allegheny County

South Fayette Township: Amon & Kaufman 1 Joseph Hickman, dry, gas sand, T.D. 1,265 ft.

Armstrong County

Kittanning Township: Local Co. 1 S. E. Heilman,, 73,000 cu. ft. gas, Tiona and Bradford sands, T.D. 3,595 ft.
L. L. Livingood 1 H. Wright, 184,000 cu. ft. gas, Tiona and Bradford sands, T.D. 3,477 ft.

Clarion County

Red Bank Township: T. W. Phillips Gas & Oil Co. 1 Daniel Wolfgang, 304,000 cu. ft. gas, Speechley, Sheffield, and Bradford sands, T.D. 3,117 ft.

Greene County

Monongahela Township: D. E. Mayne et al 1 Andrew Kovack, dry, T.D. 2,310 ft.
Richhill Township: Charles R. Sample 1 Henry Dinsmore, drilled deeper, 179,000 cu. ft. gas, gas sand 1,131-76 ft., gas 1,159 ft., T.D. 1,280 ft.

Fayette County

German Township: Greensboro Gas Co. 1 Stephen Haningosky, dry, show of 10,000 cu. ft. only, T.D. 2,622 ft.
Menallen Township: George L. Yaste 1 Darby, near Haddonville, 175,000 cu. ft. gas, Injun sand, T.D. 1,585 ft.
Nicholson Township: Wahler-Powers 2 Geneva Supply Co., 3,200,000 cu. ft. gas, Big Injun 1,224 ft., gas 1,256 ft., T.D. 1,263 ft.
Duquesne 2 Jacob Cover, 364,000 cu. ft. gas, Fifth sand 2,321 ft., gas 2,332-38 ft., T.D. 3,401 ft.
Nollem Oil & Gas Co. 1 J. D. McCann, dry, through Fifth sand, T.D. 2,620 ft.

Washington County

Morris Township: Conger et al 1 C. W. Archer, 50,000 cu. ft. gas, Fourth sand 2,752-98 ft., gas 2,764-67 ft., T.D. 2,905 ft., R.P. 490 lb.
Somerset Township: Equitable 1 Colin Swagler, drilled deeper, final gage 38,000 cu. ft. gas, T.D. 3,137 ft.

WEST VIRGINIA

In Lewis County, West Virginia, Hope Natural Gas Co. has staked a location for a rotary test on the Albert Woofter farm about ¼ mile southwest of Freemansburg in Freemans Creek district. It will be on the west flank of Chestnut Ridge, and scheduled for the Oriskany sand or deeper.

In Kanawha County, Columbian Carbon Co. bottomed Copenhaver heirs at 6,500 ft. with the Clinton sand topped at 6,336 ft. and 119,000 cu. ft. gas after shot at 6,393 ft. This was a former Oriskany sand gas well in Elk district deepened to the Clinton.

In Monongalia County, the wildcat of the Hope Natural Gas Co. on the H. C. Greer et al lease in Morgan district is drilling at 2,196 ft.

WEST VIRGINIA COMPLETIONS

Braxton County

Birch district: Pittsburgh & W. Va. 7797 Grace Berry, dry through Injun sand, T.D. 2,182 ft.

Doddridge County

West Union district: R. J. Braden & Co. 1 T. D. and E. E. Swiger, dry, Big Injun sand, T.D. 2,045 ft.

Gilmer County

DeKalb district: Knight & Whiting 2 A. B. & J. D. Vannoy, dry, Big Injun sand 1,878-1,905 ft., no Berea, T.D. 2,280 ft.

Jackson County

Ravenswood district: Boggess Drilling Co. 1 Mary Smith, Big lime 2,133-60 ft., Big Injun 2,160-68 ft., Berea 2,619-33 ft., oil 2,619-33 ft., 20 bbl., T.D. 2,638 ft.

Lincoln County

Jefferson district: Cambridge Gas Co. 1 A. L. Mullins, drilled deeper, start 2,312 ft., brown shale 3,408-17 ft., 3,595-3,615 ft., 3,645-3,760 ft., 690,000 cu. ft. gas, shot 2,524-3,485 ft., 6,400 lb. gelatin, T.D. 3,765 ft.

Pleasants County

Grand district: Faith Oil Co. 8 Wm. E. Hammett, 11 bbl., Cow Run sand, T.D. 357 ft.

Putnam County

Curry district: United Fuel 5002 Floyd Mabe et al, 45 bbl., Big lime, T.D. 1,601 ft.

Ritchie County

Grant district: P. J. McDonough 1 J. W. Mason, 5 bbl., Maxton sand, T.D. 1,420 ft.
Murphy district: John R. Geho 1 J. N. Eddy heirs, 66,600 cu. ft. gas, Maxton and Injun sands, T.D. 1,894 ft.
Union district: Carnegie 1 J. B. Ballah, drilled deeper, 103,000 cu. ft. gas, Injun sand, T.D. 2,020 ft.
Hope 7430 Cornelius Moats, drilled deeper, dry, small showing gas in Injun sand, T.D. 2,019 ft.

Upshur County

Buckhannan district: Pittsburgh & W. Va. 7787 Eva G. Allman, 1,485,000 cu. ft. gas, Gantz sand 2,185-2,225 ft., gas 2,212-19 ft., T.D. 2,225 ft.

Wayne County

Lincoln district: Owens Libby Owens 28 Wilson Coal Land Co., 177,000 cu. ft. gas, brown shale, T.D. 3,292 ft.
Stonewall district: Owens Libby Owens 24 Hoard-Baldwin, 239,000 cu. ft. gas, Big lime, T.D. 1,710 ft.

ORISKANY GAS FIELDS

Kanawha County

Poca district: Columbian Carbon Co. 1 G. B. Robinson, Corniferous lime 4,874 ft., Oriskany 4,997 ft., gage 9,000,000 cu. ft. gas after shot, T.D. 5,085 ft.
United Fuel Gas Co. 4984 C. O. Slater, Corniferous lime 4,929 ft., Oriskany 5,044 ft., gage 3,341,000 cu. ft. gas, T.D. 5,091 ft.

Jackson County

Ripley district: United Fuel Gas Co. 4981 S. R. Miller, Corniferous lime 5,148-5,240 ft., Oriskany 5,240 ft., gas 5,265-71 ft., gage 4,500,000 cu. ft. after shot, T.D. 5,294 ft.

Personal Paragraphs

JAMES M. BAGGS has taken a position as assistant chief chemist at Husky Refining Co., Cody, Wyo. Prior to this connection he was in the metals laboratory of the Wyoming State Highway Department.

PAUL WEAVER, chief geophysicist, Gulf Oil Corp., addressed the Gulf Coast chapter, National Oil Scouts and Land Men's Association, at Houston, Tex., last week on "New and Improved Drilling Methods."

WILLIAM R. DAVIS, of New York, N. Y., and Houston, Tex., has been elected president of the Panhandle Producing & Refining Co., Wichita Falls, Tex. He succeeds ROY B. JONES, Wichita Falls, who has been made chairman of the board. Mr. Jones will remain as president of Panhandle Refining Co. and will become active head of refining and marketing divisions of the company.

WILBUR EISERLOH, scout with Gulf Refining Co., Jackson, Miss., has been transferred to Arkansas.

M. J. FITZGERALD, independent operator of Tulsa, has moved to Houston, Tex.

MYRON W. MATSON, Bradford, Pa., oil producer, has been elected treasurer of the Bradford Hospital board. He is also a director.

TOM DAWSON, formerly with the Indiana Geological Survey, has joined the Carter Oil Co. and will move to Mattoon, Ill.

C. E. (CHUCK) LEARY, scout with the Texas Co. at Jackson, Miss., will shortly leave his work to accept active duty as an officer in the U. S. Navy.

C. L. MORGAN, consulting geologist, Jackson, Miss., has started the Dixie Geological Service, which will report Mississippi activity particularly from the standpoint of geology.

GEORGE A. HILL, JR., Houston Tex., president of the Houston Oil Co., was elected last week as the first "Knight of the Order of San Jacinto" by the San Jacinto chapter, Sons of the Republic of Texas.

VINCENT WHITE, oil and gas engineer for the Pampa office of the Texas Railroad Commission, has been temporarily transferred to Midland, Tex., where he will make gas-oil ratio tests of wells in that district.

GEORGE H. DENT has been appointed district engineer for the Asphalt Institute, with offices in the Transportation Building, Washington, D. C. Mr. Dent is an alumnus of University of Maryland, and served with the States Road Commission in that state for 16 years. On January 1, 1941, he was appointed paving engineer for the C.A.A. for the North Atlantic division.

SHELDON CLARK, vice president of Consolidated Oil Corp., is new chairman of the Illinois Boxing Commission. He is making an effort to get the Joe Louis-Billy Conn fight for Chicago, and thus put the city back into the front ranks as a fight city. Mr. Clark, a sports enthusiast, is national commodore of the Sea Scouts of America, commodore of the Yachting Association of America, president of the Navy League of the United States, and is also a member of the Boy Scout Council for the Chicago district.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Much gas is being wasted in Ohio Valley fields, where industrial plants pay as little as 4 cents per thousand cubic feet. The sale of liquefied gas to farms and other rural consumers has been suggested.

Harry F. Sinclair announces that arrangements have been completed for financing the newly formed Sinclair Oil & Refining Co.

20 YEARS AGO

Charters were taken out in March for 94 new oil companies with a combined capitalization of $148,850,000, compared with 64 companies with a capitalization of $136,980,000 in February.

Lord Curzon urges priority of British claims to the oil of Mesopotamia (Iraq) and suggests that the principle enunciated by the United States Government in throwing open the world's oil resources to all nationalities is not in keeping with the action of the Philippine Legislature in restricting exploration to American citizens.

Great interest is displayed in the oil possibilities of the Mackenzie and Peace River oil fields in the Canadian Northwest. One geologist states that the new discoveries place Mexico and Peru in the miniature class.

10 YEARS AGO

Gov. W. H. Murray abolished the Oklahoma Geological Survey when he vetoed the appropriation for its maintenance.

Extensive development of natural-gas pipe lines has forced manufacturers of carbon black to transfer their operations to more remote gas fields.

R. W. FRENCH, Continental Oil Co., Los Angeles, Calif., has been appointed national chairman of the topical committee on production practice, central committee on drilling and production practice, of the American Petroleum Institute's Division of Production.

DR. JOSEPH A. SHARPE, chief physicist in the joint geophysical laboratory of the Standard Oil & Gas Co. and Western Geophysical Co., Tulsa, presented a series of three lectures on geophysical exploration at Massachusetts Institute of Technology, Department of Geology, last month. Dr. Sharpe studied with DR. LOUIS B. SLICHTER, professor of geophysics at M.I.T. as a General Education Board (Rockefeller Foundation) fellow in geophysics in 1934-35.

J. U. TEAGUE, superintendent for the Hogg Oil Co., Houston, Tex., has been named chairman of the southwestern district of the central committee on drilling and production practice of the American Petroleum Institute. PAUL D. TORREY, Sloan & Zook Co., Houston, was named chairman of a special subcommittee on secondary-recovery methods, and T. A. HUBER of Humble Oil & Refining Co., Houston, was made chairman of a special subcommittee on primary pressure control.

W. K. GORDON, chairman of the board of the Texas Pacific Coal & Oil Co., Fort Worth, Tex., was reelected to his office, as were all other officers of the company, last week. J. R. PENN is president; R. SEIBEL, vice president, treasurer and secretary; C. E. YAGER, vice president; O. E. MITCHELL, vice president in charge of sales; R. J. FLECKENSTEIN, manager of production; WILLIAM K. BALL, general attorney; H. O. ANDERSON, assistant treasurer and assistant secretary; and OWEN S. McHARG, assistant secretary.

PAUL B. BROWNER has been named manager of the drilling and production departments of Housh & Thompson companies at Houston, Tex.

C. E. FEHRENBACH, chief oil photographer for Continental Oil Co., has resigned to become demonstration technician for Eastman Kodak Co., Rochester, N. Y.

HENRY W. BOGGESS, director of safety for Sinclair Prairie Oil Co., Tulsa, has been reappointed as chairman of safety activities for the 1942 International Petroleum Exposition.

W. D. CHAWNER, who recently returned from geological work in Papua, New Guinea, is now associated with the Carter Oil Co. as surface geologist in the Ark-La-Tex area.

F. S. DAVIS, land man with Atlantic Refining Co. in Jackson, Miss., has been transferred back to Southwest Texas. He will be located in San Antonio.

JUDGE CECIL MORGAN, vice president of Louark Producing Co., will be the principal speaker at the Ark-La-Tex chapter meeting of the A.P.I. May 7, where he will speak on "The Legal Aspects of Proration in the Ark-La-Tex Area."

GUY MABEE, independent oil operator and drilling contractor, has moved his office and residence from Mount Carmel, Ill., to Evansville, Ind.

TOM LEACH, former district geologist for Ohio Oil Co., is now a consultant with offices at Bismarck, N. D.

BROOKS DOZIER, cable-tool drilling contractor with offices formerly located in Vincennes, Ind., has moved his headquarters to Carmi, Ill.

JOHN P. HAMMOND, formerly with the Royal Petroleum Corp. in Tulsa, has joined Mid-Union Drilling Co. as engineer at Wichita Falls, Tex.

G. A. PROBST has joined Yale Oil Co. as purchasing agent at Billings, Mont. He was formerly assistant state purchasing agent, residing at Great Falls, Mont.

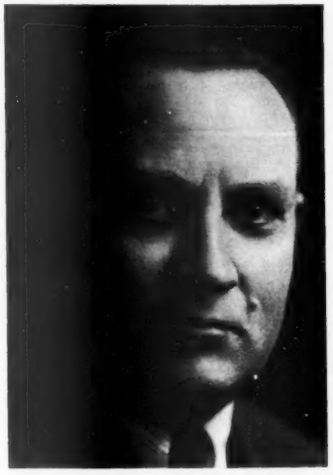
A. J. L. HUTCHINSON, Houston, Tex., attended the convention of the Natural Gasoline Association of America in Dallas, Tex., last week, after a brief stop in Tulsa.

H. W. MANLEY, superintendent of gasoline plants for Barnsdall Oil Co., is dividing his time between business and relaxation in New Orleans for several days. He is accompanied by Mrs. Manley.

JOHN WATSON is now back at his old post of district land man in the eastern district land office of Sinclair-Wyoming Oil Co. at Evansville, Ind., from which he was transferred some time ago. He succeeds J. O. SNOWDEN, who recently resigned.

Heads Oil Agency

Lawrence Vander Leck, whose experience in the California oil industry began as a roustabout in the oil fields after graduation from the University of California as a geologist in 1915, was elected president of the Oil Producers Agency of California at its annual meeting in Los Angeles, April 23, succeeding L. L. Aubert, who has held that office for the past 2 years.



LAWRENCE VANDER LECK

Mr. Vander Leck is senior vice president and a director of the Fullerton Oil Co., with which company he has been associated since 1920, following 2 years with the state Mining Bureau, as it was known then, and which is now state Division of Oil and Gas, of which he had been chief geologist. During this period, Mr. Vander Leck wrote one of the first surveys of oil resources in the state, which was issued by the Mining Bureau as Bulletin 89, "Petroleum Resources of California."

From 1935 until the middle of 1940, Mr. Vander Leck was active in the voluntary conservation program of the California industry as chairman of the Central Committee of California Oil Producers, the predecessor committee of the present Conservation Committee of California Oil Producers, which administers curtailment activities in the state. He is now a member of the Conservation Committee and a director of both the California Oil and Gas Association and the Independent Petroleum Association of America.

J. E. BANNON, Oil City, Pa., an employe for 30 years of the Atlantic Refining Co., celebrated his ninetieth birthday April 22.

WILLIAM L. DUFFIELD, City Gas Co., London, Ont., Canada, has been appointed to the board of governors of the University of Western Ontario.

FRANCIS F. HEBERT, former student at Louisiana State University, has joined Humble Oil & Refining Co. as junior petroleum engineer and is stationed at Crowley, La.

S. SLOAN O'DONNELL, an employe of Gulf Oil Corp. at its laboratories in Harmarville, Pa., was married in Oil City, Pa., last week to the former Virginia M. Collins.

CARLOS ANDERSON, petroleum engineer with Continental Oil Co., has been transferred from Hobbs, N. M., to the company's office at Mission, Tex.

CARL REISTLE, chief petroleum engineer for Humble Oil & Refining Co., Houston, Tex., addressed the petroleum-engineering class at the University of Oklahoma last week.

BYRUN P. EDMONDS, formerly assistant geophysicist with Humble Oil & Refining Co. in its offices at Houston, Tex., has been changed to the geophysics department of Carter Oil Co. in Tulsa.

WILL FERRELL, chief telegrapher of the pipe-line division, Mid-Continent Petroleum Corp., who a couple of weeks ago was stricken with a heart attack, is convalescing at his home in Tulsa, though he is still denied visitors.

W. A. (BILL) LEACH, well known in oil and gas circles as a construction engineer, is engaged in construction work building Borinquen flying field, Puerto Rico. CYRIL D. NELSON, former oil operator and contractor, is on the same job. Mr. Nelson has spent many years in Mexico and South America.

N. L. MARTIN, Bosco, La., an employe of Superior Oil Co., is among workmen selected to receive the Joseph A. Holmes medals and certificates for heroic acts and meritorious services and deeds performed during 1940. WILLIAM COWGILL, supervisor, cracking department, Shell Oil Co., Inc., Houston Tex., and P. H. DuVAL, district superintendent, Arkansas Pipe Line Corp., Longview, Tex., received similar citations.

Shifts: H. B. GRAVES, geologist, Texas Co., from Midland, Tex., to Kirkwood, Mo.; R. H. WEAVER, engineer, Sun Oil Co., from Jackson, Miss., to Shamrock, Fla.; ORVILLE O. BRAYMER, superintendent, Shell Petroleum Corp., from Centralia, Ill., to Benton, Ill.; W. E. LEROUX, engineer, Magyar Amerikai Olajipari, from Budapest, Hungary, to Tulsa; H. E. DENTON, Anglo-Canadian Oil Co., Ltd., from Longview, Alta., Canada, to Denton & Spencer Co., Calgary, Alta., Canada; G. M. ROSS, engineer, Phillips Petroleum Co., from Pontiac, Mich., to Minneapolis, Minn.; JOSEPH A. HEALY, manager land department, Belcher Production Co., from Miami, Fla., to Coral Gables, Fla.

J. WILLARD LORD, safety engineer of Atlantic Refining Co., will serve on a panel of safety experts in a commercial-vehicle quiz at the Annual Safety Convention and Exposition at New York this week.

WILLIAM G. SKELLY, president, Skelly Oil Co., Tulsa, presided over the fourth annual Southwest aviation conference at Wichita, Kans., last week. More than 30 speakers, nationally prominent in aviation, were on the program.

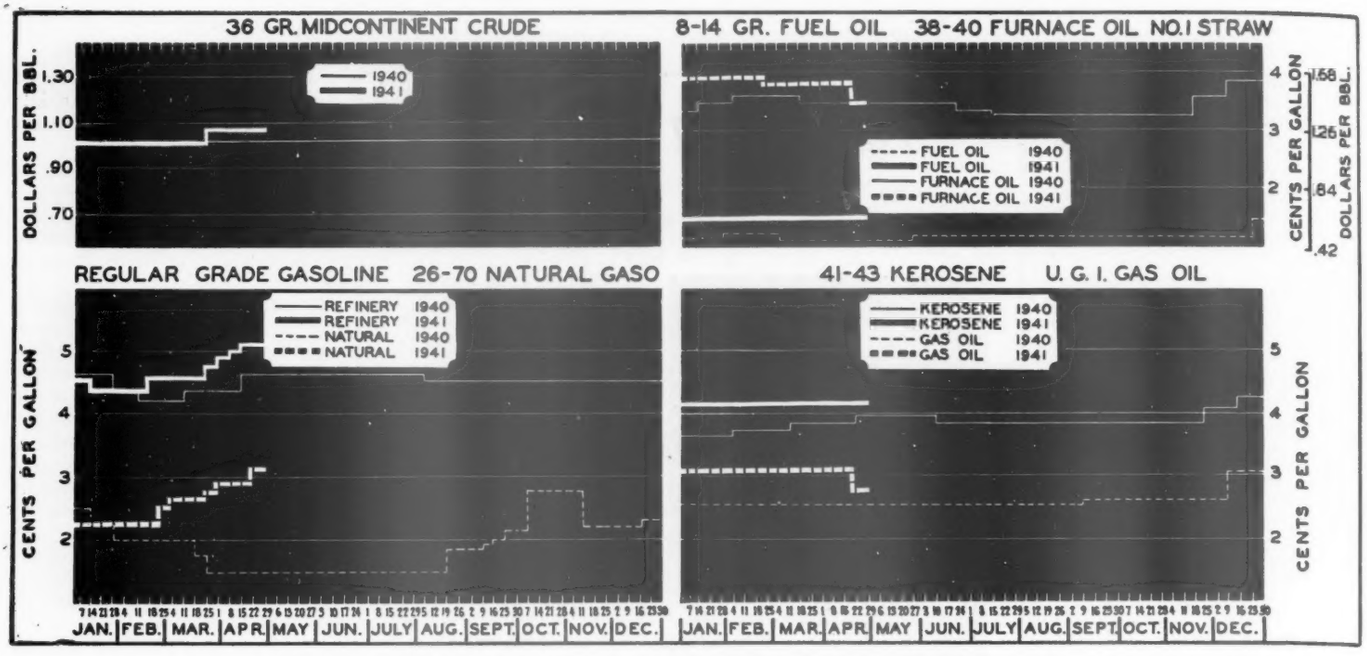
JAMES B. BROWN, refinery superintendent for Bahrein Petroleum Corp., operator of a refinery on Bahrein Island in the Persian Gulf, is on a 3-month vacation in the United States visiting relatives in Tulsa. Bombs dropped on Bahrein Island last October by Italian planes did no damage, Mr. Brown reported.

N. C. McGOWEN, president of United Gas Co., Shreveport, La., was elected last week as one of the six directors-at-large to serve on the board of the East Texas Chamber of Commerce. When Mr. McGowen was elected at Corsicana, Tex., he was recuperating from an operation performed at St. Luke's Hospital in New York City.

JOHN ROLAND, formerly of Winfield, Kans., has been named district manager of Sinclair Prairie Oil Co. at Wewoka, Okla. He replaces C. S. ROSE, who has been advanced to division superintendent at the Tulsa office. Mr. Rose succeeds D. M. INGALL, who is being sent to South America.

R. L. BLAFFER, chairman of Humble Oil & Refining Co., Houston, Tex., has been designated as area coordinator for the contract service at Houston. He would represent the Office of Production Management in advising manufacturers on contracting and financial problems connected with defense orders in the area served by the Federal Reserve Bank branch in Houston.

RICHARD H. PENCE, member of the engineering staff of the oil administrator's office, Conservation Committee of California Oil Producers, has been called to active duty with the U. S. Navy. Mr. Pence holds the rank of lieutenant in the U. S. Naval Reserve and is to report for assignment on May 5. For a number of years he was engaged in consulting work, representing both producing and refining units in California. He was retained by the California Division of State Lands in connection with its studies of the Huntington Beach oil field. In 1935 he joined the engineering staff of the oil umpire's office.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Refinery-Market Balance Swings Sharply to Mid-Continent Sellers

By H. STANLEY NORMAN

SWING of the Mid-Continent motor-fuel market to the sellers' side of the balance continued this week. Interpretation of the sellers' strong position in terms of higher prices was confined this week to natural gasoline but the lack of actual changes did not fully reflect conditions.

Analysis of April's refinery-gasoline business indicates an increase of 15 to 20 per cent for Mid-Continent suppliers over the volume of shipments for the same month last year. Results for the country as a whole will not be available until June. For the Mid-Continent alone, indications are that April gasoline business will be 17 per cent greater than a year ago and this figure, in the absence of other confirming factors, would explain why the motor-fuel market has risen about ⅝ cent per gallon since the current movement started in March.

Natural Gasoline Advanced

The Oklahoma (Group 3) natural-gasoline market has advanced ¼ cent per gallon in the past 10 days and North Texas manufacturers are quoting ½ cent per gallon higher prices on 26-70 material. The relatively larger advance in the North Texas market is explained by the lag since March of prices there behind Oklahoma and Kansas quotations. Supplies of natural gasoline available for prompt shipment are limited.

Manufacturers arranged with refineries to take substantial quantities of natural gasoline into their crude-pipe-line systems through the summer months of 1941 when the demand normally would be at its lowest level. This method of disposing of production was adopted by many manufacturers as insurance against conditions that existed in the previous summer when natural-gasoline prices were at record lows and movement dull. Production from numerous plants is now committed by contract to refiners for movement to distant plants through crude-oil lines and consequently the material available for open-market trading is limited.

Despite the depression of natural-gasoline consumption during the summer months, the overall increase of motor-fuel demand has created a tight situation in supplies of this product. Refinery customers are consuming more natural than anticipated because motor-fuel demand in the early summer months is exceeding expectations.

Suppliers of refinery gasoline are unable to meet demand without resorting to trade practices that usually do not develop until August or September. Small refiners selling almost exclusively on the spot market are booked up to their maximum scheduled production for several weeks.

The influence of probable economic developments on the current petroleum markets is strong. Buyers are believed to be purchasing ahead of immediate requirements anticipating that the increases in demand prevailing through the first 4 months will continue during the remainder of the year. This anticipation is projected on a long-term increase of 12 to 15 per cent in the domestic requirements for motor fuel. Too, there are prospects of higher taxes which may be offset temporarily by forward purchases.

Refined Oil Market Barometer

Gasoline prices throughout the country are growing stronger. Vigor of the market is drawn from consumption that is exceeding expectations and from higher crude-oil costs. Refineries in some parts of the country are sold 30 days ahead of their current-production schedules. Sellers are optimistic over their chances for dictating the market later this summer.

MID-CONTINENT: Natural-gasoline prices advanced ¼ cent.

GULF COAST: Market strong but without feature this week.

CALIFORNIA: Tank-wagon and tank-car prices advanced ½ cent.

PENNSYLVANIA: Higher neutral prices expected immediately.

CHICAGO: Fuel-oil and gasoline demand strong.

Crude Prices Mirror Demand

The firm demand for crude-oil connections in the section east of the Rocky Mountains was asserted again by price increases last week in Pennsylvania and early this week in Illinois. The advance in Illinois may be partial confirmation to opinions of several purchasers that the raise of April 1 was not enough to balance with crude demand and buying conditions in that Middle West producing state. Illinois producers have now received a total advance for their crude of 17 cents per barrel since April 1. Competition for connections in that state is brisk.

Movement of distillate fuels qualifying for tractor-motor consumption is holding at a high rate. Sellers realize, however, that the spring plowing season, which is behind the current tractor-fuel demand, will soon terminate and, consequently, they are anticipating a market reaction in a few weeks.

Heavy fuel oils are firm. Residuals with special specifications are scarce and command premiums. There is a possibility that coal shortages in certain parts of the country will soon place an even heavier call on petroleum refiners to supply fuel requirements of industries.

Another Rise in Gasoline Price Helps Eastern-Market Outlook

By J. P. O'DONNELL

NEW YORK, Apr. 28.—The East Coast motor-fuel market took further steps forward the past week, as advances were posted in both refinery tank-car, dealer tank-car and tank-wagon prices at a number of points throughout the district. At the end of the week motor fuel of 72 octane and higher was quoted at 7 cents in the New York Harbor area, ¾ cent above the preceding week.

The advance of gasoline prices to this level places the industry in its best early season position in several years and gives further indication that 1941 will be a good gasoline year. In contrast to the current open-market top of 7 cents, the corresponding price a year ago ranged from 6 to 6½ cents. This improvement is limited to gasoline for kerosene despite an increase in the past week is still 0.8 of a cent below corresponding 1940 prices and Bunker C fuel oil is off 15 cents per barrel.

After declines in some previous weeks, stocks of motor fuel on the East Coast rose during the week ended April 19. Despite this increase of 778,000 bbl., stocks, including aviation gasoline, were still 1,975,000 bbl. less than on April 20, 1940. Thus with the season of heaviest consumption still ahead, the East Coast is in substantially better statistical position this year than last. From March 29 to April 19 this year only 916,000 bbl. were added to storage on the East Coast, whereas in the same 3-week period of 1940 additions to stocks aggregated 1,956,000 bbl.

In addition to the increase in the New York Harbor refinery tank-car price, tank-car prices were raised at several New England terminals. Uniform advances of 0.25 cent were made at Boston and Providence.

Commercial tank-wagon and consumer tank-car prices were advanced 0.3 cent at Portland, Boston, Worcester and Providence and 0.4 cent in metropolitan New York on April 23 by Socony-Vacuum Oil Co., Inc., and on April 25, Standard Oil Co. of New Jersey advanced tank-car and tank-wagon prices 0.8 cent and retail service-station prices 1 cent throughout New Jersey.

No. 2 fuel-oil quotations in the New York Harbor district remained at 4.7 cents throughout the week but advances in tank-wagon prices at a number of New England points possibly presage a further increase in the still-subnormal New York Harbor tank-car price. Advances of from 0.1 to 0.3 cent were made by Socony-Vacuum Oil Co., Inc., at a half dozen New England points.

Corresponding advances were posted in kerosene with the state-wide New Jersey price being advanced to 7.8 cents, an increase of 0.2 cent, and advances of from 0.2 to 0.4 cent being posted at a number of New England points. The tank-wagon price in metropolitan New York was raised 0.2 cent to 7.7 cents. The tank-car price in the New York Harbor district was also advanced 0.2 cent to 5.2 cent in midweek in contrast to 6 cents a year ago.

Light-fuel-oil stocks rose slightly during the last week for which data are available and remain more than 1,500,000 bbl. higher than in mid-April 1940. Residual fuel-oil stocks on the East Coast, however, continued their decline and are now but 342,000 bbl. above last year's level. Heavy fuel-oil stocks enjoy a position somewhat comparable to gasoline in that greater demand of the current year has made equivalent storage less than before.

Consumer tank-car and dealer tank-wagon gasoline prices in Pennsylvania were revised upward earlier this month for the first change in that marketing area in some time. Atlantic Refining Co. raised tank-car prices at all major consuming points 0.5 cent except at Erie. Dealer tank-wagon prices were raised in several Pennsylvania cities and in Delaware 0.5 cent also.

Last week's advance in Pennsylvania Grade crude-oil prices was interpreted as a forecast of higher prices for lubricating oils. The Pennsylvania lubricating-oil market, particularly for neutrals, continues strong. Despite recent improvement, bright-stock prices continue low and further price advances for this product are anticipated. One large supplier of Pennsylvania Grade bright stock has predicted that bright stock will reach 20 cents by early May, 4 cents above current prices.

While the domestic market continues to improve, little change is apparent in export volume and extravagant predictions of the benefits to result from the enactment of the lease-lend bill have not yet been fulfilled. Increased export inquiries are credited at least in part with the improvement in lubricating oils and wax. Wax is now being quoted at 3.5 cents for higher melting-point grades by some suppliers.

Efforts to increase imports of fuel oil, particularly of heavier grades, are reported under way as an exceptionally heavy demand is anticipated. Despite that increase Bunker C fuel oil ,at its current price of $1.35 is still 15 cents lower than a year ago.

Ability to increase imports apparently is threatened by a shortage of tankers, another of which was chartered to British interests last week for shuttling Caribbean area products to North Atlantic ports. Tanker rates in the Gulf-to-north-of-Hatteras service were again unchanged at from 50 to 57 cents per barrel.

Trading Slows Down on Coast; Prices Are Steady

HOUSTON, Tex., Apr. 29.—Trading in refinery products was slow on the Gulf Coast the past week with no important spot sales of any description being reported. The week generally was the quietest since before the market upturn nearly 2 months ago. The new week is starting off without any indication of a pickup.

The market, however, continues to display strength throughout all products, and a generally optimistic undertone continues to prevail. For the most part, the present inactivity is regarded as a temporary lull pending a renewed spurt in buying which is expected to be followed by further rising of prices.

At the opening of the week refiners were asking from 5½ to 5¾ cents for 72-74-octane (leaded) gasoline. The latest sale of gasoline recorded was some 80 research gasoline which moved for 5¾ cents which the buyers were trying to get for 5½ cents. Quotations on 70-72-octane unleaded gasoline range from 5¾ to 5⅞ cents.

Heavy fuels also remain strong in price although there has been virtually no demand for these products the past 10 days. Suppliers, however, are in a position of not having an excessive volume of material on hand although it has been noted that inventories of heavy fuel on the Gulf Coast have been steadily increasing. With prospects of greatly increased demand when national-defense industries get into full swing, suppliers are not alarmed at the present inactivity. Bunker C fuel, both in ships' bunkers and in cargoes, is firm at 85 cents.

Increasing firmness is indicated in coastal lubricating oil.

A.P.I. Weekly Refinery Statistics

Week Ended April 26, 1941

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	20,177,000	8,483,000	7,641,000	537,000
Appalachian	91.0	3,197,000	470,000	381,000	129,000
Ind., Ill., and Ky.	90.2	18,313,000	3,211,000	2,392,000	601,000
Okla., Kans., and Mo.	76.9	8,663,000	1,962,000	1,254,000	274,000
Inland Texas	59.6	2,236,000	1,387,000	337,000	129,000
Texas Gulf	89.2	15,612,000	6,367,000	5,250,000	898,000
Louisiana Gulf	97.6	3,398,000	2,117,000	1,142,000	128,000
N. Louisiana and Ark.	51.5	600,000	590,000	294,000	52,000
Rocky Mountains	56.0	1,720,000	476,000	150,000	58,000
California	87.3	15,956,000	‡8,059,000	10,172,000	539,000
Total reported	86.2	89,872,000	93,122,000	29,013,000	3,345,000
Est. unreported	.....	6,775,000	1,610,000	530,000	330,000
*Est. total	.....	†96,647,000	94,732,000	29,543,000	3,675,000
*Est. total previous wk.	.....	97,899,000	95,636,000	28,410,000	3,705,000
*April 27, 1940	.....	103,583,000	102,500,000	24,825,000	3,555,000

*Bureau of Mines. †Includes 6,932,000 bbl. aviation gasoline.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended April 19, 1941	265,471,000 barrels
Week ended April 12, 1941	265,160,000 barrels
Week ended April 20, 1940	254,881,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

RETAIL OIL MARKETS...

Tank-wagon and filling-station prices on gasoline and kerosene furnished by larger marketing firms

Prices as of April 29, 1941

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.5	10.0
Decatur	15.1	13.6	4.5	8.5
Joliet	16.1	14.6	4.5	10.0
Peoria	16.1	13.7	4.5	10.0
Quincy	15.9	14.4	4.5	9.8
Davenport, Ia.	16.1	14.6	4.5	10.0
Des Moines	15.9	14.4	4.5	9.8
Mason City	16.3	14.8	4.5	10.2
Duluth, Minn.	16.9	15.4	4.5	10.8
Mankato	16.5	15.0	4.5	9.5
Minneapolis	16.5	14.7	4.5	10.4
LaCrosse, Wis.	17.5	16.0	5.5	10.4
Green Bay	17.9	16.4	5.5	10.8
Milwaukee	17.3	15.8	5.5	10.2
Detroit, Mich.	15.1	13.6	4.5	8.1
Grand Rapids	15.4	13.9	4.5	9.1
Saginaw	15.4	13.9	4.5	9.1
Evansville, Ind.	17.1	14.9	5.5	9.8
Indianapolis	17.3	15.3	5.5	10.0
South Bend	17.3	15.8	5.5	10.0
Fargo, N. D.	18.7	17.2	5.5	11.6
Huron, S. D.	18.0	16.5	5.5	10.9
Kansas City, Mo.	15.4	12.4	4.5	8.6
St. Louis*	15.2	13.7	4.5	9.6
St. Joseph	15.4	13.5	4.5	8.4
Wichita, Kans.	14.3	12.8	4.5	7.2

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers. On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off, minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Apr. 18, 1941, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7.25 cents; 400 gal. and over, 6.75 cents. Stanolex fuel oil A, 1-99 gal., 7.5 cents; 100-399 gal., 6.5 cents; 400-749 gal., 5.5 cents; 750 gal. and over, 4.75 cents. Stanolex fuel oil B, 1-99 gal., 7.5 cents; 100-399 gal., 6.5 cents; 400-749 gal., 5.5 cents; 750 gal. and over, 4.75 cents. Stanolex Bunker C fuel oil, 1-399 gal., 6.0 cents; 400-999 gal., 5.0 cents; 1,000 gal. and over, 4.0 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Cons'r tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Atlantic City	11.60	12.80	4.5	7.8
Newark	11.60	12.80	4.5	7.8
Annapolis, Md.	12.85	14.35	5.5	9.5
Baltimore	12.25	13.75	5.5	8.0
Cumberland	13.65	15.15	5.5	10.0
Washington, D.C.	10.50	12.00	3.5	9.0
Danville, Va.	14.45	16.95	6.5	9.75
Norfolk	13.25	15.75	6.5	9.5
Petersburg	13.55	16.05	6.5	10.5
Richmond	13.55	16.05	6.5	10.5
Roanoke	14.75	17.25	6.5	10.0
Charles'n, W. Va.	14.05	16.55	6.5	11.5
Parkersburg	13.35	15.85	6.5	11.2
Wheeling	14.35	15.40	6.5	11.8
Charlotte, N. C.	16.40	16.50	7.5	10.1
Hickory	16.95	18.45	7.5	10.0
Mt. Airy	16.80	16.00	7.5	10.7
Raleigh	16.15	17.00	7.5	10.0
Salisbury	16.45	15.50	7.5	10.4
Charleston, S. C.	14.25	16.75	7.5	9.25
Columbia	15.10	17.60	7.5	(*)
Spartanburg	15.80	18.30	7.5	(*)

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery: 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

***Kerosene business of the company at these points now exclusively handled by dealers.**

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Cons'r tank wag.	Net dlr.	Incl. tax	Kero. tank wag.
Atlanta, Ga.	17.0	17.0	7.5	10.0
Augusta	17.0	17.0	7.5	9.5
Macon	17.0	17.0	7.5	9.0
Savannah	16.0	16.0	7.5	9.0
Birmingham, Ala.	17.0	17.0	8.5	8.0
Mobile	17.5	17.5	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.5	16.5	7.5	9.0
Vicksburg	16.0	16.0	7.5	8.5
Jacksonville, Fla.	17.0	17.0	8.5	8.0
Miami	17.0	17.0	8.5	8.0
Pensacola	17.5	17.5	9.5	8.0
Tampa	17.0	17.0	8.5	8.0
Lexington, Ky.	16.0	16.0	6.5	9.0
Covington	14.0	14.0	6.5	9.0
Louisville	15.5	15.5	6.5	8.5
Paducah	16.0	16.0	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon: Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
Philadelphia, Pa.	13.0	14.0	5.5	9.5
Pittsburgh	13.5	15.0	5.5	10.5
Allentown	13.5	15.0	5.5	10.5
Erie	12.5	15.0	5.5	10.0
Scranton	13.5	15.0	5.5	10.5
Altoona	13.5	15.0	5.5	10.5
Dover, Del.	...	14.5	5.5	10.5
Wilmington	...	14.0	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank truck	Serv. sta.	Incl. tax	Kero. tank wag.
San Francisco	17.0	18.5	4.5	11.5
Los Angeles	16.5	17.5	4.5	10.0
Fresno, Calif.	18.0	19.0	4.5	12.5
Phoenix, Ariz.	21.0	22.0	6.5	*17.5
Reno, Nev.	20.0	21.0	5.5	13.5
Portland, Ore.	19.5	20.5	6.5	13.5
Seattle, Wash.	19.5	20.5	6.5	13.5
Spokane	21.0	22.0	6.5	16.5
Tacoma	19.5	20.5	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Cons'r tank car	Dlr.* tank wag.	Incl. tax	Kero. tank wag.
Albany	13.9	13.7	5.5	7.6
Met. New York	13.4	13.7	5.5	7.9
Buffalo	13.5	13.7	5.5	8.0
Rochester	14.2	14.4	5.5	8.6
Syracuse	14.0	14.2	5.5	8.5
Portland, Me.	13.8	14.5	5.5	8.0
Manchester, N. H.	14.6	14.5	5.5	8.9
Burlington, Vt.	14.9	15.1	5.5	8.2
Boston, Mass.	12.4	12.7	4.5	7.9
Worcester	13.4	13.3	4.5	8.0
Hartford, Conn.	13.3	13.5	4.5	7.4
New Haven	13.0	13.2	4.5	6.8
Providence, R. I.	12.4	13.2	4.5	7.7

*Undivided.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Incl. tax	Kero. tank wag.
Denver, Colo.	14.0	5.5	10.5
Grand Junction	17.5	5.5	12.0
Pueblo	14.0	5.5	9.0
Casper, Wyo.	16.5	5.5	11.5
Cheyenne	15.5	5.5	11.0
Billings, Mont.	17.5	6.5	12.0
Butte	16.5	6.5	13.0
Great Falls	16.5	6.5	12.0
Helena	16.5	6.5	12.5
Salt Lake, Utah	17.0	5.5	14.0
Boise, Idaho	†19.6	6.5	16.0
Twin Falls	†20.6	6.5	16.5
Albuquerque, N. M.	*17.0	7.0	9.5
Roswell	*15.0	7.0	8.0
Santa Fe	‡17.5	7.5	9.5

*Includes city tax of 0.5 cent. †Includes toll-bridge tax of 1 mill. ‡Includes city tax of 1 cent.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Cons'r tank car	Dlr. tank wag.	Incl. tax	Kero. tank wag.
New Orleans, La.	14.25	16.75	8.5	‡10.0
Baton Rouge	14.75	17.25	8.5	‡10.5
Alexandria	14.75	17.25	8.5	‡10.5
Lafayette	15.00	17.50	8.5	‡10.0
Lake Charles	14.75	17.25	8.5	‡10.0
Shreveport	14.00	16.50	8.5	10.0
Knoxville, Tenn.	18.00	20.00	8.5	12.5
Memphis	15.00	17.00	8.5	10.5
Chattanooga	17.50	17.35	8.5	12.0
Nashville	17.00	17.50	8.5	10.0
Bristol	18.25	18.25	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Tank wag.	Incl. tax	Kero. tank wag.
Texarkana, Ark.	13.5	5.5	6.0
Fort Smith	13.5	5.5	6.5
Little Rock	16.75	8.0	8.0
Muskogee, Okla.	13.00	5.5	7.0
Oklahoma City	12.00	5.5	7.0
Tulsa	12.50	5.5	7.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Dlr.	Incl. tax	Kero. tank wag.
Omaha	17.9	16.4	6.5	9.8
McCook	17.5	14.9	6.5	8.5
Norfolk	18.0	16.4	6.5	9.9
North Platte	18.3	16.5	6.5	10.2
Scottsbluff	17.4	15.5	6.5	9.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline Tank wag.	Serv. sta.	Incl. tax	Kero. tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Tank-Wagon Changes

Standard Oil Co. of California advanced the tank-truck and posted-retail prices of all grades of gasoline 0.5 cent per gallon April 24 at San Francisco, Los Angeles and Fresno, Calif., Phoenix, Ariz., Reno, Nev., Portland, Ore., Seattle, Spokane and Tacoma, Wash.

Standard Oil Co. of New Jersey advanced the tank-wagon price on kerosene 0.2 cent per gallon April 23 throughout New Jersey. The company advanced the dealer tank-wagon price of gasoline 0.5 cent per gallon April 19 at Wheeling, W. Va.

Atlantic Refining Co. advanced the consumer tank-car and dealer tank-wagon price 0.5 cent per gallon April 12 at Philadelphia, Allentown, and Scranton, Pa. The consumer price was advanced 0.5 cent at Pittsburgh and Altoona, Pa., April 12 and dealer prices were raised 0.5 cent at Dover and Wilmington, Del.

Socony-Vacuum Oil Co., Inc., advanced the consumer tank-car price of gasoline 0.4 cent per gallon at New York, 0.3 cent at Portland, Me., Boston and Wooster, Mass., and Providence, R. I., on April 23. The dealer tank-wagon price was reduced 0.4 cent at Albany, N. Y., April 23 and advanced 0.3 cent per gallon the same day at New York City. The company advanced kerosene tank-wagon prices April 23 by the following amounts: 0.2 cent at Albany, N. Y., 0.4 cent at New York, 0.3 cent at Portland, Me., 0.2 cent at Manchester, N. H., Burlington, Vt., and Boston, Mass., 0.3 cent at Worcester, Mass., 0.4 cent at Hartford, Conn., and 0.2 cent at Providence, R. I. The kerosene price was reduced 0.5 cent per gallon April 23 at New Haven, Conn.

PRICES OF REFINED PRODUCTS...

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 29, 1941
(Most prices in cents per gallon)

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.05⅛	.05¼
63-66 octane	.04⅞	.05
60 octane and below	.04¼	.04½
60-62 400 grades:		
72-74 octane (regular)	.05⅛	.05¼
63-66 octane	.04⅞	.05
60 octane and below	.04¼	.04½

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.05	.05⅛
63-66 octane	.04¾	.05
60 octane and below	.04¼	.04½
60-62 400	.04¼	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05	.05¼
63-66 octane	.04¾	.05
60 octane and below	.04¼	.04½

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)	.05	.05¼
60 octane and below	.04¼	.04½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.05⅛	.05¼
63-66 octane	.04⅞	.05
60 octane and below	.04¼	.04½
60-62 400 grades:		
72-74 octane (regular)	.05⅛	.05¼
63-66 octane	.04⅞	.05
60 octane and below	.04¼	.04½

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)	.06	.06¼
72-74 octane	.05¾	.06

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.05½	.07
54-58 U. S. Motor	.04¾	.06¼

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.06¾	.07
Philadelphia	.06¼	.86¾
Boston	.06½	.06¾
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06¾

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane (leaded)	.05½	.05¾
70-72 octane (unleaded)	.05¾	.05⅞
68-70 octane (unleaded)	.05½	.05¾
Below 68 octane (unleaded)	.05¼	.05½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03½
Grade 18-55	.03¾

NORTH TEXAS—

Grade 26-70	.03
Grade 18-55	.03½

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.03

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03½	.03⅝
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 i.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.04¼	.04⅛
41-43	.04⅛	.04⅜

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅛

ARKANSAS (Ark. and N. La. del.)—

41-43	.04	.04¼

PENNSYLVANIA (inland refineries)—

46	.05¼	.05⅜
45	.05⅛	.05¼

CHICAGO (Based on Group 3)—

42-44	.04¼	.04½
41-43	.04⅛	.04⅜

CALIFORNIA (Pac. Coast market)—

38-40 high-burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43	.052

GULF COAST (domestic)*—

41-43	.03⅜

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03½	.03⅜
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03½	.03⅜

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03⅜

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03⅜

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-42	.03¾	.04
No. 2 straw, 32-36	.03⅝	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1	.052
*No. 2	.047
*No. 3	.047

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02¾	.03
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.70	.75

NORTH TEXAS—

U.G.I. gas oil, under 35	.03	.03⅛
No. 5, low pour point, 18-22	.75	.80
No. 6, 15 and above, 8-14	.65	.70

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.03⅛	.03¼
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.70	.80
No. 6, low pour point, 10-16	.70	.80
No. 6, 15 and above, 8-14	.70	.75

PENNSYLVANIA (inland refineries)—

36-40	.04⅝	.05

CALIFORNIA—

Los Angeles:

30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.85
10-17 (high sulfur)	.45	.60
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.75	.80

GULF COAST—

No. 2 fuel		.03¼
43-47 diesel	.03¼	.03⅜
48-52 diesel	.03⅜	.03⅝
53-57 diesel	.03½	.03⅞
58-and-above diesel	.03⅝	.03¾
Diesel bunkers		1.45
Bunker C (bulk cargoes)		.85
Bunker C (bunkers)		.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.048
28-30 diesel (lighterage 6¼c per bbl.)		1.95
28-30 diesel (tank cars)		.048
Bunker C (to ocean-going ships in N. Y. Harbor)		1.35
Industrial fuel (tank cars)	.03¼	.03½

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25	.19
150-160 D, 0-10	.14½
150-160 D, 10-25	.14
100-110 D, 0-10	.14
100-110 D, 10-25	.13½
Steam refined:	
600 dark green (untreated)	.08

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.18½
15 pour point		.17½
25 pour point		.16
Steam refined:		
600	.09½	.11
650	.09½	.13
600 flash	.10	.12
630 flash	.11	.12

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.08½
180-3	.09
200-3	.09
250-3	.10½
280-3	.11
280-4	.10½
300-3½	.11½
350-3½	.12
400-3½	.12½
500-3½	.13
600-3½	.13½
100-2½ paraffin oil 10-25	.05¼
10-25 pour point:	
200-3	.08½
250-3	.10
280-3	.10½
280-4	.10

CALIFORNIA (moving to dom. market)—

Pale oils:		
200-2¼-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

GULF COAST—

Pale oils:		
100-3	.05⅛	.05¼
200-3	.07¼	.07⅜
300-3	.07½	.07⅝
500-3½	.08¼	.08½
750-3½	.08⅝	.08⅝
1,200-3½	.08⅝	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06⅞	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅝	.08½
1,200-5-6	.08¼	.08⅝
100-2½-3	.07¼	.08

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pour point		.26½
10 pour point		.25½
15 pour point		.24½
25 pour point		.22
200 vis., at 70° F., 3 color:		
Zero pour point		.28½
10 pour point		.27½
15 pour point		.26½
25 pour point		.24

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.03	.03⅛

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale		.03¼
124-126 (A.m.p.) w.c. scale		.03¼

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p. wax		.0560
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.		.03¼
124-126 (A.m.p.) y.s.		.03¼
Petrolatum in barrels, carload lots:		
Dark green	.02500	.02625
Amber	.02375	.02875
Extra amber	.02625	.03250
Lily white	.04375	.05125
Snow white	.05125	.06125
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

60-62 400	.04½	.05½
61-63 390	.04½	.05¼
64-66 375	.04½	.05¼

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.05½	.05¾
65-69 octane	.05¼	.05½
60-65 octane	.04½	.05

KEROSENE

GULF COAST—

41-43 water white	.03⅜	.03½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbl.)—

Cylinder stocks:	
600 S.R. unfiltered	.18
630 S.R. unfiltered	.18¼
600 flash, S.R.	.18½
650 flash, S.R.	.20
Bright stock:	
Light, 25 pour point	.22

NEUTRAL OIL

200-3 color	.31
150-3 color	.28½

PARAFFIN WAX

NEW YORK (prices per lb.)—

123-125 A.m.p.		.0560
125-127 A.m.p.		.0560
128-130 A.m.p.		.0585
133-135 A.m.p.		.0615
135-137 A.m.p.		.0640
Crude scale:		
124-126 w.s.		.03¼
124-126 y.s.		.03¼

CRUDE-OIL PRICES . . .

MIDDLE WEST FLAT PRICES

Illinois and Indiana

Ohio Oil Co.:
Illinois basin, 4-28-41 ..... $1.27
Eastern Illinois, 4-28-41 ..... 1.12
Western Indiana, 4-28-41 ..... 1.12

Magnolia Petroleum Co.:
Illinois basin, 4-28-41 ..... $1.27

Carter Oil Co.:
Illinois (Louden), 4-28-41 ..... $1.27

Sohio Corp.:
Illinois basin, 4-28-41 ..... $1.27

Texas Co.:
Illinois basin, 4-28-41 ..... $1.27

Gulf Refining Co.:
Illinois basin, 4-28-41 ..... $1.27

Michigan

Simrall Corp., 4-1-41:
Greendale, Porter, Vernon, Crystal, and Wise $1.27
Buckeye, Bentley, Edenville, Beaverton, and Monitor (sweet) 1.25
Freeman-Redding, Lincoln, and Winterfield 1.22
Hamilton-Grout 1.12
West Branch-Arenac 1.07

Sohio Corp., 4-1-41:
Bloomingdale-Columbia $1.28

Mid-West Refineries, Inc., 4-3-41:
Kent County $1.28

Pure Transportation Co., 4-1-41:
Greendale, Porter, Crystal, Vernon, and Wise $1.27
Freeman-Redding and Lincoln .. 1.22
West Branch, Adams-Arenac ... 1.07
Midland 1.27

Kentucky

Ashland Refining Co., 4-1-41:
Big Sandy River $1.17
Kentucky River 1.25
Western Kentucky 1.15

Sohio Corp., 4-1-41:
Birk City $1.00

WEST TEXAS, PANHANDLE, AND NEW MEXICO GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Below 20	$.60	...	...	...	...	...	...	...
20-20.9	.62	...	...	...	...	...	...	...
21-21.9	.64	...	...	...	...	...	...	...
22-22.9	.66	...	...	...	...	...	...	...
23-23.9	.68	...	$.68	...	...	...	...	...
24-24.9	.70	...	.70	...	...	...	...	...
Below 25	...	$.70	...	...	...	...	$.70	...
25-25.9	.72	.72	.72	...	$.72	...	.72	...
26-26.9	.74	.74	.74	...	.74	...	.74	...
27-27.9	.76	.76	.76	...	.76	...	.76	...
28-28.9	.78	.78	.78	.78	.78	...	.78	$.68
29-29.9	.80	.80	.80	.80	.80	...	.80	.70
30-30.9	.82	.82	.82	.82	.82	...	.82	.72
31-31.9	.84	.84	.84	.84	.84	...	.84	.74
32-32.9	.86	.86	.86	.86	.86	...	.86	.76
33-33.9	.88	.88	.88	.88	.88	...	.88	.78
34-34.9	.90	.90	.90	.90	.90	$.90	.90	.80
35-35.9	.92	.92	.92	.92	.92	.92	.92	.82
36-36.9	.94	.94	.94	.94	.94	.94	.94	.84
37-37.9	.96	.96	...	.96	.96	.96	...	.86
38-38.9	.98	.98	...	.98	.98	.98	...	.88
39-39.9	1.00	1.00	...	1.00	1.00	1.00	...	.90
40 and above	1.02	1.02	...	1.02	1.02	1.02	...	.92

WEST TEXAS, PANHANDLE AND NEW MEXICO TABLE EXPLANATION

Column (1):
Humble Oil & Refining Co., 3-29-41, includes Andrews, Crane, Crockett, Ector, Gaines, Glasscock, Howard, Reagan, Upton, Winkler, and Yoakum counties, West Texas; Carson, Gray, Hutchinson, and Wheeler counties in the Panhandle, and Lea County, New Mexico.
Gulf Refining Co., 4-1-41, includes Crane, Ector, Upton, Ward, and Winkler and the Panhandle.
Shell Oil Co., Inc., 3-29-41, includes Crane, Ector, Howard, Glasscock, Upton, Winkler, and Yoakum counties, Texas, and Lea County, New Mexico.
Column (2):
Sinclair Prairie Oil Marketing Co., 4-1-41, includes Lea County, New Mexico, and Panhandle counties.
Magnolia Petroleum Co., 4-1-41, includes Upton, Howard, Glasscock, Mitchell, Winkler, Cochran, Hockley, Yoakum and Gaines counties.
Column (3):
Texas Co., 3-29-41, includes Crane and Winkler counties, Texas, and Lea County, New Mexico.
Column (4) Texas Panhandle:
Magnolia Petroleum Co., 4-1-41.
Continental Oil Co., 3-29-41.
Column (5) Winkler and Lea:
Stanolind Oil & Gas Co., 4-1-41, includes Winkler County only.
Gulf Refining Co., 4-1-41, includes Lea County, New Mexico, only.
Column (6) Gray County:
Texas Co., 3-29-41.
H. F. Wilcox Oil & Gas Co.
Column (7) Lea County:
Magnolia Petroleum Co., 4-1-41.
Column (8) Eddy County:
Continental Oil Co., 3-29-41.

NORTH LOUISIANA AND SOUTHERN ARKANSAS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Below 18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18-18.9	...	...	...	...	...	...	...	...	...	...	$.75	$.80	...	$.84	...
19-19.9	...	...	...	...	...	...	...	...	...	...	.77	.82	...	.86	...
Below 20	...	...	...	...	...	...	...	...	...	...	.79	.84	...	.88	...
20-20.9	...	...	...	...	...	...	...	$.96	...	...	...	...	$.84	...	...
Below 21	$.58	...	...	$.80	...	...	...	.98	...	...	.81	.86	.86	.90	$.80
21-21.9	.60	...	...	.82	...	...	...	...	...	...	...	...	...	...	.82
22-22.9	.62	...	...	.84	...	...	...	1.00	...	...	.83	.88	.88	.92	.84
23-23.9	.64	...	...	.86	...	...	...	1.02	...	...	.86	.91	.91	.95	.86
24-24.9	.66	...	...	.88	...	...	...	1.04	...	...	.89	.94	.94	.98	.88
Below 25	...	$.76	$.88	...	...	$.78	...	1.06	...	...	.92	.97	.97	1.01	...
25-25.9	.68	.78	.90	.90	...	.80	...	...	$.78	...	...	...	...	...	.90
26-26.9	.70	.80	.92	.92	...	.82	...	1.08	.80	...	.95	1.00	1.00	1.04	.92
27-27.9	.72	.82	.94	.94	...	.84	...	1.10	.82	...	.98	1.03	1.03	1.07	.94
28-28.9	.74	.84	.96	.96	...	.86	...	1.12	.84	...	1.00	1.05	1.05	1.09	.96
29-29.9	.76	.86	.98	.98	...	.88	...	1.14	.86	...	1.02	1.07	1.07	1.11	.98
30-30.9	.78	.88	1.00	1.00	$1.16	.90	...	1.16	.88	...	1.04	1.09	1.09	1.13	1.00
31-31.9	.80	.90	1.02	1.02	1.18	.92	...	1.18	.90	...	1.06	1.11	1.11	1.15	1.02
32-32.9	.82	.92	1.04	1.04	1.20	.94	...	1.20	.92	$.97	1.08	1.13	1.13	1.17	1.04
33-33.9	.84	.94	1.06	1.06	1.22	.96	...	1.22	.94	.99	1.10	1.15	1.15	1.19	1.06
34-34.9	.86	.96	1.08	1.08	1.24	.98	...	1.24	.96	1.01	1.12	1.17	1.17	1.21	1.08
35-35.9	.88	.98	1.10	1.10	1.26	1.00	...	1.26	.98	1.03	1.14	1.19	1.19	1.23	1.10
Below 36	...	...	...	...	...	...	$.97	...	.99	1.05	...	...	...	...	...
36-36.9	.90	1.00	1.12	1.12	...	1.02	.99	...	1.00	1.07	...	...	...	...	1.12
37-37.9	.92	1.02	1.14	1.14	...	1.04	1.01	...	1.01	1.09	...	...	...	...	...
38-38.9	.94	1.04	1.16	1.16	...	1.06	1.03	...	1.02	1.11	...	...	...	...	...
39-39.9	.96	1.06	1.18	1.18	...	1.08	1.05	...	1.03	1.13	...	...	...	...	...
Above 40	.98	1.08	1.20	1.20	...	1.10	1.07	...	1.04	1.15	...	...	...	...	...

LOUISIANA AND SOUTHERN ARKANSAS GRAVITY EXPLANATION

Standard Oil Co. of Louisiana, 4-1-41.
Column 1 applies to Atlanta, Buckner, Magnolia, Schuler (Jones sand), and Village fields.
Colum 2 applies to Caddo, De Soto, Sabine, Fouke, Homer, Miller County, and Sugar Creek.
Column 3 applies to Bunkie, Eola, and Olla.
Column 4 applies to Bayou Mallet, Choctaw, Darrow, Jeanerette, Lirette, North Crowley, South Crowley, Port Barre, Potash, Roanoke, and St. Martinville.
Column 5 applies to University (Baton Rouge).
Column 6 applies to Cotton Valley crude, Rodessa and Shreveport (Cross Lake).

Continental Oil Co., 4-1-41.
Column 7 applies to Abbeville, Louisiana.

Stanolind Oil & Gas Co., 4-1-41.
Column 8 applies to East and West Hackberry.
Column 9 applies to Caddo Parish.
Column 10 applies to Evangeline, Acadia Parish.

Lion Oil Refining Co., 4-1-41.
Column 1 applies to Reynolds lime, Jones sand, Schuler, Ark.
Column 2 applies to El Dorado, West and South Rainbow fields, Snow Hill, and Schuler-Morgan sand.

Placid Oil Co., 4-1-41.
Column 4 applies to Olla, except no minimum gravity specified.
Column 2 applies to Nebo field, except no minimum gravity specified.

Shell Oil Co., Inc., 4-1-41.
Column 11 applies to Roanoke.
Column 12 applies to Iowa.
Column 13 applies to Black Bayou and White Castle.

Magnolia Petroleum Co., 4-1-41.
Column 14 applies to Lockport, Cameron Meadows, and West Gueydan, La.
Column 6 applies to Haynesville, Cotton Valley, Rodessa, La., and Miller County, Arkansas.

Phillips Petroleum Co., 3-29-41.
Column 1, Schuler (Jones sand), except schedule starts at 66 cents for below 29° gravity.

Gulf Refining Co., 4-1-41.
Column 10, Jennings.
Column 8, Edgerly, Starks, Vinton, East Hackberry, Cameron Meadows, Leesville, Timbalier Bay, Grand Bay Quarantine Bay, and West Bay.

Pure Oil Co., 4-16-41.
Column 15 applies to Gueydan crude.
Colum.n 6, Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, and Eldorado.

LOUISIANA AND ARKANSAS FLAT PRICES

Continental Oil Co., 4-1-41:
Tepetate $1.08
Ville Platte 1.10
Lake Arthur 1.08

Lion Oil Refining Co., 4-1-41:
Smackover (heavy) $0.76
Dorcheat 1.05

Phillips Petroleum Co., 3-29-41:
Smackover (heavy) $0.76

Placid Oil Co., 4-1-41:
Tullos-Urania $1.05
Cotton Valley dist. (above 60°) .. 1.20
Cotton Valley (Holloway sand) .. 1.15
Cotton Valley (Bodcaw-D sands) 1.10

Pure Oil Co., 4-1-41:
Bosco $1.04
Sweet Lake ..... .96
Creole 1.06

Republic Oil Co., 4-1-41:
Nevada County, Arkansas $0.60

Shell Oil Co., Inc., 4-1-41:
Gibson $1.09
Happytown 1.05

Standard Oil Co. of Louisiana, 4-1-41:
Big Creek, Dorcheat, McKamie (sour) $1.05
Smackover (heavy) ..... .76
Cotton Valley distillate 1.20
Cotton Valley (Holloway sand) .. 1.15

TEXAS GULF COAST GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)
Below 20	$.96	$.96	...	$.88	$.83
20-20.9	.98	.98	...	.90	.85
Below 21	...	...	$.98	...	...
21-21.9	1.00	1.00	1.00	.92	.87
22-22.9	1.02	1.02	1.02	.94	.89
23-23.9	1.04	1.04	1.04	.96	.91
24-24.9	1.06	1.06	1.06	.98	.93
25-25.9	1.08	1.08	1.08	1.00	.95
26-26.9	1.10	1.10	1.10	1.02	.97
27-27.9	1.12	1.12	1.12	1.04	.99
28-28.9	1.14	1.14	1.14	1.06	1.01
29-29.9	1.16	1.16	1.16	1.08	1.03
30-30.9	1.18	1.18	1.18	1.10	1.05
31-31.9	1.20	1.20	1.20	1.12	1.07
32-32.9	1.22	1.22	1.22	1.14	1.09
33-33.9	1.24	1.24	1.24	1.16	1.11
34-34.9	1.26	1.26	1.26	1.18	1.13
35-35.9	1.28	...	1.28	1.20	1.15
36-36.9	1.30	...	1.30	1.22	1.17
37-37.9	1.32	...	1.32	1.24	1.19
38-38.9	1.34	...	1.34	1.26	1.21
39-39.9	1.36	...	1.36	1.28	1.23
40 and above	1.38	...	1.38	1.30	1.25

TEXAS GULF COAST GRAVITY TABLE EXPLANATION

Column (1):
Humble Oil & Refining Co., 3-29-41, includes Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa (new), Raccoon Bend, South Thompsons, Sugarland, Thompsons, and Webster fields.
Stanolind Oil & Gas Co., 4-1-41, includes West Beaumont.
Sinclair Prairie Oil Marketing Co., 4-1-41.
Stanolind Oil Purchasing Co., 4-1-41, includes Clinton where schedule starts at 98 cents for below 21°, regular thereafter.
Pure Oil Co., 4-1-41, includes Louise and Ganado.
Gulf Refining Co., 4-1-41, includes Spindletop, Sour Lake, Lovells Lake, West Beaumont, Goose Creek, South Liberty, Big Creek, Blue Ridge, Fannett, Moore, Barbers Hill, Hankamer, Thompson, Lochridge, Dyersdale, and Hull (old).
Sun Oil Co., 4-1-41, includes Goose Creek which covers Bayou Blue (below 25°), Esperson (below 25°), Hackberry (below 25°), Orange and Vinton (below 25°).
Column (2):
Texas Co., 3-29-41, includes Arriola, Ganado, Hamman, Hillje, Humble, Kubela, Magnet, Manvel, Markham, Mauritz, Old Ocean, Pickett Ridge, Port Neches, Sour Lake, West Columbia, and Withers.
Column (3):
Stanolind Oil & Gas Co., 4-1-41, includes High Island, Spindletop, Hastings, and South Houston.
Pan American Pipe Line Co., 4-1-41, includes Hastings and South Houston.
Column (4):
Humble Oil & Refining Co., 3-29-41, includes Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull (new and old), Pierce Junction, Red Fish Reef, and Turtle Bay.
Gulf Refining Co., 4-1-41, includes Anahuac, Hull (new), Thompson (deep), Pierce Junction, and Orange.
Sun Oil Co., 4-1-41, includes Anahuac, Barbers Hill, Caplen, Chacahoula, Hackberry (25° and above), and Turtle Bay.
Column (5):
Humble Oil & Refining Co., 3-29-41, includes Dickinson, Gillock, Hardin, League City, and Rowan.
Stanolind Oil & Gas Co., 4-1-41, includes Fairbanks, North Houston, and Rosyln.

ROCKY MOUNTAIN FLAT PRICES

Wyoming

Ohio Oil Co., 4-1-41:
Rock River $1.05
Lance Creek ..... .82

Stanolind Oil & Gas Co., 4-1-41:
Frannie field (light) $0.65
Frannie field (heavy) ..... .42
Grass Creek (light) ..... .90
Grass Creek (heavy) ..... .45
Hamilton dome ..... .40

Continental Oil Co., 4-1-41:
Big Muddy $0.98
Lance Creek ..... .82

Montana

Continental Oil Co., 4-1-41:
Cat Creek $1.15

Colorado

Continental Oil Co., 4-1-41:
Canon City-Florence $0.95

Stanolind Oil & Gas Co., 4-1-41:
Iles $0.97

FORT COLLINS AND WELLINGTON

(Posted by Continental Oil Co., 4-1-41)

Below 29 ..... $0.86
29-29.9 ..... .88
30-30.9 ..... .90
31-31.9 ..... .92
32-32.9 ..... .94
33-33.9 ..... .96
34-34.9 ..... .98
35-35.9 ..... 1.00
36-36.9 ..... 1.02
37-37.9 ..... 1.04
38-38.9 ..... 1.06
39-39.9 ..... 1.08
40 and above 1.10

SOUTH TEXAS AND SOUTHWEST TEXAS GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Below 20	$.93	$.98	$.98	$.89	$.93	$.93	...
20-20.9	.95	1.00	1.00	.90	.95	.95	$1.00
21-21.9	.97	1.02	1.02	.91	.97	.97	1.02
22-22.9	.99	1.04	1.04	.92	.99	.99	1.04
23-23.9	1.01	1.06	1.06	.93	1.01	1.01	1.06
24-24.9	1.03	1.08	1.08	.94	1.03	1.03	1.08
25-25.9	1.05	1.10	1.10	.95	1.05	1.05	1.10
26-26.9	1.07	1.12	1.12	.96	1.07	1.07	1.12
27-27.9	1.09	1.14	1.14	.97	...	1.09	1.14
28-28.9	1.11	1.16	1.16	.98	...	1.11	1.16
29-29.9	1.13	1.18	...	.99	...	...	1.18
30-30.9	1.15	1.20	...	1.00	...	...	1.20
31-31.9	1.17	1.22	...	1.01	...	...	...
32-32.9	1.19	1.24	...	1.02	...	...	...
33-33.9	1.21	1.26	...	1.03	...	...	...
34-34.9	1.23	1.28	...	1.04	...	...	...
35-35.9	1.25	1.30	...	1.05	...	...	...
36-36.9	1.27	1.32	...	1.06	...	...	...
37-37.9	1.29	1.34	...	1.07	...	...	...
38-38.9	1.31	1.36	...	1.08	...	...	...
39-39.9	1.33	1.38	...	1.09	...	...	...
40 and above	1.35	1.40	...	1.10	...	...	...

SOUTH AND SOUTHWEST TEXAS GRAVITY TABLE EXPLANATION

Column (1) Mirando:

Humble Oil & Refining Co., 3-29-41, includes Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (North and South), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, and Tesoro.

Magnolia Petroleum Co., 4-1-41.

Continental Oil Co., 3-29-41, excepting scale starts at 95 cents for below 21°, otherwise regular. Includes Hoffman, Government Wells (North and South), Lopez, Moco, Colmena, Seven Sisters, South Seven Sisters, Loma Novia, Conoco, Driscoll, O'Hern, Piedre Lumbre, and Taranchauas.

Amsco Pipe Line Co., 3-29-41, includes Adami and Munson.

Sun Oil Co., 4-1-41, includes following fields and specified oils in Texas and Louisiana Gulf Coast: Batson (old), Bayou Blue (25° and above), Cotton Lake, Fausse Point, Greens Lake, Hull (below 25°), Humble (below 33°), Nome, North Dayton (below 25°), Saratoga, South Liberty, Sour Lake and Vinton (25° and above).

Column (2) Refugio:

Humble Oil & Refining Co., 3-29-41, includes East White Point, Greta, Melon Creek, O'Connor-McFaddin, Plymouth, Saxet, Taft, and Tom O'Connor.

Amsco Pipe Line Co., 3-29-41, includes Plymouth, Taft, and East White Point.

Continental Oil Co., 3-29-41, includes Orange Grove and Wade City, except that table there starts at $1 for below 21° gravity.

Column (3) Corpus Christi and Refugio:

Texas Co., 3-29-41, includes Greta, Saxet, and Taft.

Amsco Pipe Line Co., 3-29-41, includes Corpus Christi, Saxet, and Saxet-Frio.

Column (4) La Rosa:

Amsco Pipe Line Co., 3-29-41.

Column (5) Duval-Mirando:

Sun Oil Co., 4-1-41.

Column (6) Duval-Mirando:

Texas Co., 3-29-41.

Column (7) Clara Driscoll:

Continental Oil Co., 3-29-41, includes Minnie Bock, Clara Driscoll, South Clara Driscoll, and Driscoll Ranch.

OKLAHOMA AND KANSAS GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Below 21	...	...	...	...	$.75	$.65	...	$.60
21-21.9	...	...	...	...	.77	.68	...	.63
22-22.9	...	...	...	...	.79	.71	...	.66
23-23.9	...	...	...	...	.81	.74	...	.69
24-24.9	...	...	...	...	.83	.77	...	.72
Below 25	$.83	...	...	$.76	...	...	...	...
25-25.9	.85	$.63	...	.78	.85	.80	$.85	.75
26-26.9	.87	.68	...	.80	.87	.83	.87	.78
27-27.9	.89	.73	...	.82	.89	.86	.89	.81
28-28.9	.91	.78	$.91	.84	.91	.89	.91	.84
29-29.9	.93	.83	.93	.86	.93	.92	.93	.87
30-30.9	.95	.87	.95	.88	.95	.95	.95	.90
31-31.9	.97	.91	.97	.90	.97	.97	.97	.92
32-32.9	.99	.95	.99	.92	.99	.99	.99	.94
33-33.9	1.01	1.01	1.01	.94	1.01	1.01	1.01	.96
34-34.9	1.03	1.03	1.03	.96	1.03	1.03	1.03	.98
35-35.9	1.05	1.05	1.05	.98	1.05	1.05	1.05	1.00
36-36.9	1.07	1.07	1.07	1.00	1.07	1.07	1.07	1.02
37-37.9	1.09	1.09	1.09	1.02	1.09	1.09	1.09	1.04
38-38.9	1.11	1.11	1.11	1.04	1.11	1.11	1.11	1.06
39-39.9	1.13	1.13	1.13	1.06	1.13	1.13	1.13	1.08
40 and above	1.15	1.15	1.15	1.08	1.15	1.15	1.15	1.10

OKLAHOMA AND KANSAS GRAVITY EXPLANATION

Column (1) Mid-Continent grades:

Pure Oil Co., 4-1-41.

Gulf Oil Corp., 4-1-41.

Skelly Oil Co. (Kansas only), 4-1-41.

H. F. Wilcox Oil & Gas Co., 4-1-41.

Column (2) Mid-Continent grades:

Sinclair Prairie Oil Marketing Co., 4-1-41.

Column (3) Mid-Continent grades:

Champlin Refining Co., 4-1-41.

Continental Oil Co., 4-1-41.

Phillips Petroleum Co., 4-1-41.

Tide Water Associated Oil Co., 4-1-41.

Column (4) Jackson, Tillman counties:

Gulf Oil Corp., 4-1-41.

Column ((5) Mid-Continent grades:

Standard Oil Co. (Indiana), 4-1-41.

Column (6) Mid-Continent grades:

Magnolia Petroleum Co., 4-1-41.

Shell Oil Co., Inc, 4-1-41.

Column (7) Kansas only:

White Eagle Oil Purchasing Co., Inc., 4-1-41.

Column (8) Carter County, Oklahoma, including Healdton, Oscar, Spring, and Seay.

Shell Oil Co., Inc., 4-1-41.

Ben Franklin Refining Co., 4-1-41.

OKLAHOMA FLAT PRICE

Cumberland $1.02

Pure Oil Co., 1-10-41.

NORTH TEXAS, WEST CENTRAL TEXAS, EAST CENTRAL TEXAS GRAVITY TABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Below 20	...	...	...	...	$.73	...	...
20-20.9	...	...	...	...	.75	...	...
Below 21	...	...	...	...	...	$.68	...
21-21.9	...	...	...	...	.77	.70	...
22-22.9	...	...	...	...	.79	.72	...
23-23.9	...	...	...	...	.81	.74	...
24-24.9	...	...	...	...	.83	.76	...
Below 25	...	...	$.78	...	...	...	$.76
25-259	$.78	...	.80	$.87	.85	.78	.78
26-26.9	.80	...	.82	.89	...	.80	.80
27-27.9	.82	...	.84	.91	...	.82	.82
28-28.9	.84	$.84	.86	.93	...	.84	.84
29-29.9	.86	.86	.88	.95	...	.86	.86
30-30.9	.88	.88	.90	.97	...	.88	.88
31-31.9	.90	.90	.92	.99	...	.90	.90
32-32.9	.92	.92	.94	1.01	...	.92	.92
33-33.9	.94	.94	.96	1.03	...	.94	.94
34-34.9	.96	.96	.98	1.05	...	.96	.96
35-35.9	.98	.98	1.00	1.07	...	.98	.98
36-36.9	1.00	1.00	1.02	1.09	...	1.00	1.00
37-37.9	1.02	1.02	1.04	1.11	...	1.02	1.02
38-38.9	1.04	1.04	1.06	1.13	...	1.04	1.04
39-39.9	1.06	1.06	1.08	1.15	...	1.06	1.06
40 and above	1.08	1.08	1.10	1.17	...	1.08	1.08

NORTH TEXAS, WEST CENTRAL TEXAS, EAST CENTRAL TEXAS TABLE EXPLANATION

Column (1) West Central and North:

Humble Oil & Refining Co., 3-29-41, includes Brown, Callahan, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, and Throckmorton counties.

Panhandle Refining Co., 3-29-41, in Leuders area and 4-1-41 in Wichita Falls area.

Gulf Refining Co., 4-1-41.

Column (2) North Texas:

Continental Oil Co., 3-29-41.

Magnolia Petroleum Co., 4-1-41.

Sinclair Prairie Oil Marketing Co., 4-1-41, including Mexia.

Bell Oil & Gas Co., 4-1-41.

Texas Co., 3-29-41.

Column (5) East Central:

Magnolia Petroleum Co., 4-1-41, includes Cass, Panola, and Rodessa (Texas and Louisiana), and Miller County, Arkansas.

Gulf Refining Co., 4-1-41, includes Rodessa, Texas.

Column (4) East Central:

Humble Oil & Refining Co., 3-29-41, includes Anderson, Cherokee, Limestone, and Navarro counties and the Navarro Crossing field.

Column (5) East Central:

Humble Oil & Refining Co., 3-29-41, includes Hawkins field.

Column (6) North Texas:

Stanolind Oil Purchasing Co., 4-1-41.

Column (7) Fisher County:

Shell Oil Co., Inc., 3-29-41.

EASTERN STATES

Pennsylvania and Ohio

South Penn Oil Co.:

National lines, 4-23-41	$2.40
Southwest Penn, 4-23-41	2.05
Eureka lines, 4-23-41	1.99
Corning grade, 4-1-41	1.17

Tide Water Associated Oil Co.:

Bradford, 4-23-41	$2.40
Allegany, N. Y., 4-23-41	2.40

Pennzoil Co.:

Group A 4-23-41	$2.33
Group B, 4-23-41	2.32
Group C, 4-23-41	2.31
Group D, 4-23-41	2.30
Group E, 4-23-41	2.28

Quaker State Oil Refining Corp.:

In Buckeye lines, 4-23-41	$1.95
In Eureka lines, 4-23-41	1.99

West Virginia

Pure Oil Co.:

Cabin Creek, 4-23-41 ..... $1.99

NEW MEXICO FLAT PRICE

Eddy County $0.84

Sinclair Prairie Oil Marketing, 4-1-41.

Crude-oil markets for Texas fields on a flat-price basis appear on Page 65. Full tables will appear in the first issue of each month. Representative prices will be published in intervening issues.

STANDARD OIL CO. OF CALIFORNIA

CRUDE-OIL PRICES EFFECTIVE APRIL 24, 1941

(All gravities above those quoted take highest price offered in that field)

Gravity	Signal Hill (Long Beach)	Wilmington	(El Segundo)	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Elwood Terrace
14-14.9	...	$.63	...	...	$.65	...	...	$.65	...	$.66	$.65	$.65	$.67	...	...	...	...	...	$.68	$.68	$.68	...	...	...
15-15.9	...	.64	...	...	.68	$.70	...	.65	...	.67	.65	.66	.67	...	...	...	...	...	.68	.68	.68	...	...	...
16-16.9	...	.65	$.73	...	.70	.73	...	.66	...	.69	.66	.68	.67	...	...	...	...	...	.68	.68	.68	...	...	...
17-17.9	...	.68	.75	...	.73	.76	...	.68	...	.70	.68	.71	.67	...	...	...	...	...	.68	.72	.68	...	...	...
18-18.9	$.74	.71	.77	...	.75	.79	...	.71	...	.72	.71	.74	.67	...	...	...	...	...	.72	.75	.68	...	...	...
19-19.9	.78	.75	.80	...	.79	.82	...	.75	...	.75	.73	.77	.68	...	...	...	...	$.68	.75	.78	.68	...	...	...
20-20.9	.82	.80	.84	...	.83	.86	$.75	.79	...	.79	.76	.81	.70	...	...	...	...	.70	.79	.81	.70	...	...	...
21-21.9	.86	.85	.88	...	.87	.89	.79	.82	...	.84	.79	.85	.74	...	...	...	...	.73	.84	.84	.73	...	...	...
22-22.9	.90	.89	.91	$.77	.91	.92	.82	.86	...	.88	.83	.89	.78	...	...	...	...	.76	.88	.87	.77	$.71	...	...
23-23.9	.94	.93	.94	.83	.94	.95	...	.89	...	.93	.88	.93	.82	...	...	...	...	.80	.93	.90	.80	.74	...	...
24-24.9	.97	.97	.98	.88	.98	.98	f.o.b.	.93	...	.97	.92	.97	.86	$.93	...	...	...	.84	.97	.93	.83	.77	...	...
25-25.9	1.01	1.02	1.02	.94	1.02	1.01	our	.97	...	1.00	.96	1.01	.90	.96	...	...	...	.88	1.01	.95	.86	...	...	...
26-26.9	1.05	1.06	1.05	.99	1.05	1.04	pipe	1.01	...	1.03	1.01	1.05	.94	1.00	...	...	...	.91	1.06	.98	.89	...	...	...
27-27.9	1.09	1.10	1.08	1.04	1.09	1.08	line	1.04	...	1.07	...	1.09	.98	1.04	...	...	...	.95	1.10	1.01	.92	...	...	...
28-28.9	1.13	1.14	1.11	1.08	1.12	1.11	...	1.07	...	1.10	...	...	1.01	1.07	$1.01	...	...	.99	1.14	1.04	.95	...	...	...
29-29.9	1.16	1.17	...	1.13	1.15	1.14	...	...	$1.10	...	...	...	1.05	1.11	1.05	...	...	1.02	1.19	1.06	.97	...	...	...
30-30.9	1.20	1.21	...	...	1.19	1.17	...	...	1.15	...	...	...	1.08	1.15	1.09	$.95	$1.03	1.05	1.23	1.09	1.00	...	...	...
31-31.9	...	...	...	...	...	1.20	...	...	1.19	...	...	...	1.12	1.18	1.13	.99	1.06	1.09	...	...	1.02	...	...	f.o.b.
32-32.9	...	...	...	...	...	...	...	...	1.24	...	...	...	1.16	1.22	1.17	1.02	1.09	1.12	...	...	1.05	...	...	ship
33-33.9	...	...	...	...	...	...	...	...	1.28	...	...	...	1.20	...	1.21	1.05	1.12	...	...	...	1.07	...	...	$1.19
34-34.9	...	...	...	...	...	...	...	...	1.32	...	...	...	1.25	...	1.25	1.09	1.15	...	...	...	1.10	...	...	1.23
35-35.9	...	...	...	...	...	...	...	...	...	...	...	...	1.30	...	...	1.12	1.18	...	...	...	...	$1.19	...	1.26
36-36.9	...	...	...	...	...	...	...	...	...	...	...	...	1.34	...	...	1.16	1.21	...	...	...	...	1.23	...	...
37-37.9	...	...	...	...	...	...	...	...	...	...	...	...	1.39	...	...	1.19	...	...	...	...	...	1.26	...	...
38-38.9	...	...	...	...	...	...	...	...	...	...	...	...	1.43	...	...	1.22	...	...	...	...	...	...	...	...
39-39.9	...	...	...	...	...	...	...	...	...	...	...	...	1.47	...	...	...	...	...	...	...	...	...	...	...
40-40.9	...	...	...	...	...	...	...	...	...	...	...	...	1.50	...	...	...	...	...	...	...	...	...	...	...

For Newhall, Kern River, Kern Front, McKittrick and Round Mountain, Standard posts 68 cents for all grades.

Special Products From Natural Gasoline Command Attention

(Continued from Page 15)

summarized the ideas expressed and gave his views on the subject by first pointing out that the usual objective in separating isobutane from the normal butane and other hydrocarbons is to provide a charging stock for a special refining process which converts the isomer to aviation gasoline of unusually high octane value. He stressed the need to determine whether the natural gas being processed contains an unusually high proportion of isobutane before any thought is given to recovering it. He said no thought should be given to recovering isobutane from the general run of natural gas in the Mid-Continent. Then he stressed the need to effect a sharp separation of the isobutane from all other hydrocarbons so that the purity of the isobutane may be as near 100 per cent as is practicable for in its subsequent processing in a refinery the yield of finished motor fuel will be greatly influenced by the presence of other hydrocarbons. He finally stressed the need to bring about the separation of isobutane in at least two separate fractionations, the first to recover the equivalent of an isobutane distillate and the second to effect final separation. This discussion prompted the suggestion that greater accuracy be provided in the laboratory analysis of low-boiling fractions and in attempting to correlate the normal plant operating practices with the laboratory findings. Alois Kremser, Standard Oil Co. of California, recommended adjusting the rate of reflux to the quality of the feed instead of its quantity. Dr. Walter J. Podbielniak agreed that small discrepancies exist among laboratories making fractional analyses of gas but intimated further that the margin of disagreement was too small to lose its value in guiding plant fractionation control. He said the builders of laboratory fractionating apparatus were perfecting the precision of each part of the equipment as sharply as possible and adopting automatic control to eliminate the human element in readings and adjustments as completely as practicable. At this point Dr. G. G. Brown, University of Michigan, called attention to the need for knowing what the object of the test is to be. He agreed with Dr. Podbielniak that the present fractionation procedure was adequate to control the normal plant operation. He recommended stating in advance of the laboratory test what the results were to be used for so that the operator could adjust the speed of his work and degree of precision accordingly.

Another operating problem which prompted considerable discussion was the clogging of natural-gas lines with gas hydrates, and R. A. Carter, Continental Oil Co., summarized the difficulties and exhibited means for eliminating these troubles. In part he said:

"For the present we are content to let the chemists and physicists continue their controversy over whether hydrates consist of hydrocarbon molecules in combination with seven molecules of water or whether it is only six molecules of water. From the practical side, the fact still remains evident that whatever the composition of the hydrates they definitely will cause lines to become plugged under certain physical conditions and result in no end of trouble to the operators of pressure-maintenance and repressuring systems.

"It is this condition with which the field man is confronted, and he must in this day and age arrive at a solution for a minimum of expenditure; and many and ingenious are the methods and devices used to accomplish the results desired. The following are a few methods: Reduction in line pressure; heating the gas line; lubricating materials into line, and partial dehydration or dehumidification."

KREMSER PRESENTED WITH HANLON AWARD

Each year the association recognizes an outstanding figure in the natural-gasoline industry to receive the E. I. Hanlon Award. This year the honor came to Alois Kremser, assistant director of research for the Standard Oil Co. of California. Mr. Kremser has been especially influential in plant-equipment design and operation as a result of his work on fractionation.

Born in Austria in 1888 he came to America and his first experience in oil was as mechanical engineer for the American Oil Co. in 1922. Then in 1931 he accepted employment as an authority on all phases of gasoline-plant operation.

George Bunn presents the 1941 E. I. Hanlon Award to Alois Kremser. Mr. Kremser holds the gold watch as a special token while Mr. Bunn holds the plaque upon which the name of recipient will be engraved

Long Service Records

Attending the convention were many who had served the industry for a long period and when George Bunn sought the registration of 25 and 20-year men the following signed the list at the desk:

20 years.—A. V. Bourque, president, A. V. Bourque, Inc.; W. H. Williams, plant superintendent, Warren Petroleum Corp.; Paul Schaefer, superintendent, Glen Rose Gasoline Co.; C. L. Simmons, district superintendent, Magnolia Petroleum Co.; E. A. Thoes, superintendent, Shell Oil Co., Inc.; C. E. Haines, plant superintendent, Shell Oil Co., Inc.; J. H. Boyle, secretary, Hanlon-Buchanan, Inc.; G. E. Canaday, plant superintendent, Skelly Oil Co.; D. H. Proffitt, gas tester, Phillips Petroleum Co.; A. C. Brock, plant superintendent, Phillips Petroleum Co.; D. E. Buchanan, president, Hanlon-Buchanan, Inc.; L. Lamar, superintendent, Shell Oil Co., Inc.

25 years.—C. E. Wharton, general superintendent, Hanlon-Buchanan, Inc.; S. W. Young, superintendent gasoline plant, Shell Oil Co., Inc.; Fred Ketchum, plant superintendent, Owens, Libby-Owens Gas Dept.; C. S. Worley, chief engineer, Consolidated Gas Utilities Corp.; K. W. Bunch, superintendent, Portland Gasoline Co.; R. W. Gordon, superintendent, Lone Star Gasoline Co.; F. L. Rhoades, superintendent gasoline plant, United Gas Co.; J. W. Kearney, plant superintendent, Warren Petroleum Corp.; Steve Neely, general superintendent gasoline department, Cabot Carbon Co.

In discussing "old timers," a fitting resolution was passed as presented by Ray Miller, in which he called attention to the passing of Frank Chase, former vice president of the Lone Star Gasoline Co., and the loss his death has occasioned to the association in his friendly work, counsel and enthusiasm.

A resolution was also adopted in which the Natural Gasoline Supply Men's Association was complimented for its program of entertainment which included a dutch lunch and floor show.

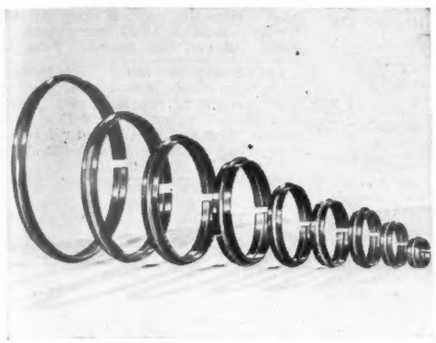
Repeated reference was made in the course of the convention to the new data booklet compiled by the supply men which this year contains 88 pages of curves and fundamental data.

New officers of the Natural Gasoline Supply Men's Association reviewing the 1941 compilation of tables and curves now being distributed among gasoline-plant engineers and operating men. Seated are L. S. Allen, National Tank Co. president; George Probst, Clark Brothers Co., Inc., first vice president; D. A. Leach, Chicago Bridge & Iron Co., second vice president; C. D. Peterson, Fisher Governor Co., treasurer. Standing are W. F. Lowe, secretary; J. H. Satterwhite, Westcott & Greis, Inc., director; A. M. Buxton, Cooper-Bessemer Corp., director, and W. W. Woobank of Woobank Pump & Machinery Co., retiring president and director. Directors not included are V. C. Canter, Frick-Reid Supply Corp.; William Gebo, Ingersoll-Rand Co., R. T. Roberts, Goulds Pumps, Inc., and Ray Miller, newly elected president of the Natural Gasoline Association of America.

EQUIPMENT PROGRESS...

Tube-Turns Welding Rings for Fittings and Straight Pipe

Tube-Turns welding rings are so designed that they can be used with all types of Tube-Turns welding fittings and straight pipe. Scientifically designed, they assure a perfect, full-strength joint and practically eliminate the human-element hazard in welding.



Besides speeding up the actual welding process in both arc and gas methods, they simplify the lining up in that no clamps, guides, or fixtures of any kind are needed for supporting pipe and fittings for tack welding. Tube-Turns, Inc., Louisville, Ky., offer a new welding-ring folder giving complete details.

TRADE LITERATURE

AMERICAN STEEL & WIRE CO., Rockefeller Building, Cleveland, Ohio.—A 50-page booklet giving helpful information and suggestions for the proper handling and maintenance of wire rope. It covers such important subjects as unreeling and uncoiling, seizings, attaching of clips and sockets, splicings, lubrication, gaging, etc.

D. W. HAERING & CO., INC., 2308 South Winchester Avenue, Chicago.—8-page bulletin describing the latest developments in proportioning and sampling equipment. Construction, operation, and application of the new and improved Nelson chemical-proportioning pump are discussed. Complete dimensions, capacities, and operating data, together with a thorough discussion of the unique Nelson valve and packing construction are presented. The fluid-piston principle, basis of the popular Model "B" feeder and all Haering proportioning and sampling machines is explained and thoroughly discussed with reference to design, construction, and operation of these machines. The latest improvements in the design of these machines are discussed, pointing to increased operating efficiencies, convenience, and general utility.

WILLIAM W. NUGENT & CO., INC., 410 Hermitage Avenue, Chicago.—Bulletin 7A, comprising 28 pages, with numerous illustrations, not only for the pressure oil filter and its operation, but every conceivable application. Any liquid that contains foreign solids, as small as 0.0001 in., that will not destroy the filtering medium or its parts, can be successfully handled.

BROWN INSTRUMENT CO., Wayne and Roberts Avenues, Philadelphia, Pa.—New, 1941 calendar (No. G-42). The varied problems encountered in modern industrial processes are presented in a humorous vein by a series of original cartoons. Along with the humor is included helpful engineering information in the form of charts such as fuel-gas analysis-checking chart, steam-leakage chart, psychrometric chart, pipe data, comparative fuel costs, oil-measurement table at 60° F., etc.

LUMMUS CO., 420 Lexington Avenue, New York—Bulletin R-5, illustrating and describing various petroleum-refining processes and types of units. Feature of the booklet are simplified flow charts and descriptions of the polyform and gas-reversion processes, Lummus cracking process, lubricating-oil processing system, lubricating-oil rerun unit, special naphtha rerun unit, two-stage distillation process, three-stage distillation process, Perco catalytic desulfurization process, Perco copper sweetening, Pure Oil thermal polymerization process, furfural refining process, and solvent dewaxing process.

DRESSER MANUFACTURING CO., Bradford, Pa.—8-page catalog on its Bellmaster joints, Type 85, a simpler, easier-to-install mechanical joint for cast-iron pipe. The new-type joint is completely described and sizes and specifications given.

AMERICAN INSTRUMENT CO., Silver Springs, Md.—Catalog ZD 41, containing 184 pages describing instruments and apparatus for chemical, biological, physical, clinical, pathological, research, engineering and materials-testing laboratories. It presents recent additions to the company's line, and includes useful data that enable the laboratory worker to select the most suitable and reliable controls and other devices for constant-temperature applications.

Franks Company Moves James Moon to California Office

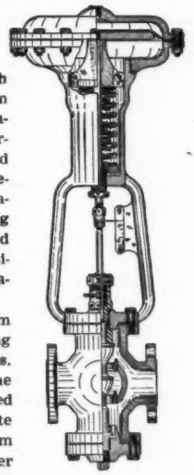
James Moon, design engineer for the Franks Manufacturing Corp., is being transferred from the main offices and plant in Tulsa to the Los Angeles offices of Hillman-Kelley, Inc., Franks' California representative. Mr. Moon will work with Hillman-Kelley in servicing Franks equipment in California, and improving the design of Franks portable drilling and servicing units to meet California conditions. He will also work to push sales of the Franks telescoping servicing unit, which was the first such unit to be used in California.

Miers Father of 7-Lb. Boy

Shep Miers, representative for Southwest Supply Co. at its Tulsa office, is the father of a 7-lb. son born Monday morning, April 28.

Hanlon-Waters Adds New Motor Valve to Line

A new Type 86 motor valve has just been announced by Hanlon-Waters, Inc., Tulsa, as the latest addition to its rapidly expanding line of specialized control equipment. Among the features incorporated, are an improved top and bottom guided inner valve structure; top works of advanced design with upper guiding obtained from frictionless rollers running inside of the enclosed spring barrel on a concentric machined surface. Positive alignment being maintained between the diaphram plate and the stuffing box by means of this improved roller guide, thus assuring positive and even action for variations of diaphram pressure.



Yoke styled with ample room to facilitate repacking stuffing box or mounting attachments. Travel indicator shows the travel in inches from the closed position on the scale plate mounted on yoke arm. Minimum body restriction permits inner valve to dominate flow through full travel. Inner valves are of the high-parabolic type and are fully reversible in the field without the use of special tools or additional parts. The Type 86 motor valve is available with iron or steel bodies and with a number of inner valve and seat materials. Flanging of any series and some bodies with special flange facings are available from stock.

Cooper Opens Houston Branch

Fred E. Cooper, designer and manufacturer of Allis-Chalmers well-servicing units, will open a new branch plant at 1418 Franklin Street, Houston, Tex., on May 1. This new sales and service branch will carry a comprehensive line of Allis-Chalmers well-servicing units, both winch-tractor and skid-winch type, along with a complete line of Allis-Chalmers oil-field power engines.

The hoisting and drilling units carried in stock will be those suitable for use in the Gulf Coast fields. A service and parts department will be maintained. The new branch will be managed by George Plank, who was formerly in charge of the branch at Longview.

TULSA NOMADS CHAPTER IS PRESENTED CHARTER

Ted Sutter, vice president and general manager of Baker Oil Tools, Inc., Los Angeles, Calif., and president of the board of regents of the Nomads organization, presented the Tulsa chapter with a charter at its monthly dinner April 21. The picture shows Mr. Sutter (left) presenting the charter to W. G. Green, Engineering Laboratories, Inc., president of the Tulsa Nomads. G. H. Westby, president of the Seismograph Service Corp., spoke at the dinner giving his observations of his recent trip to Venezuela and other South American points. H. C. Price of the H. C. Price Co., Bartlesville, Okla., showed a movie of the laying of a pipe line for the Mene Grande Oil Co. in eastern Venezuela.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney. Box 1122, Little Rock, Ark.

INVESTIGATIONS, REPORTS AND MAPS
On producing or nonproducing oil land in Louisiana. Nominal fee.
Petroleum Service Bureau
606 Gravier St., New Orleans

WARD-Crane sec. 18B 28, near Silurian test; cheap fee or lease. J. G. Smith, 215 Littlefield Bldg., Austin, Texas.

NEW MEXICO
Oil and Gas Leases and Royalties
ROY G. BARTON, Hobbs, N. M.

10,000-ACRE BLOCK of leases in recommended Rocky Mountain area. Want operator to associate in development Box A-423, The Oil and Gas Journal, Tulsa, Okla.

NEW MEXICO
STATE OIL AND GAS LEASES
FORTY acres and multiples thereof. Near major company lease blocks. Five cent rentals. Ten Year term. Write for information.
HARRY S. WRIGHT
New Mexico State Lessee
Farmington, New Mexico.

INVESTIGATIONS—REPORTS
SURVEYS—MAPS
Producing and Nonproducing properties in Texas.
OILFIELDS SERVICE CO.
Box 2951 Houston, Tex.

60 ACRES Semi Proven lease for development, on override bases in Texas. Wells flow. Box A-432, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE Oil and gas leases located on structure and near well now drilling. Depth of drilling, through the Corniferous, 700 to 800 feet. W. P. Harley, Bowling Green, Ky.

LEASES & ROYALTIES. New field in Western N. Dakota. Get in now while prices are low. The Willoymer Co., Center, N. Dakota.

EXCEEDINGLY shallow oil found in undeveloped region. Write N. M. Sauls, Geologist, Cookeville, Tennessee.

U. S. OIL RESERVE lands can be filed for lease on limited acreage by American Citizens. Want several join me in filing block in developing Rocky Mountain Area. Big opportunity. Small expense. Box A-346, The Oil and Gas Journal, Tulsa, Okla.

LEASES AND ROYALTIES
Large and Small Acreage in and adjacent block leased by major company
P. O. BOX 272, CONVENT, LA.

FOR SALE: Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

Leases and Drilling Blocks

CHOICE BLOCK oil leases, Eastern Illinois, five years, rental 25 cents per acre, ⅞ oil and gas. Some geology, want a test, will sell some acreage to carry expense. S. J. Burkitt, Moweaqua, Ill.

WANT drilling deal highly geologized structure, Elk Co. Kans. Already proven productive. 5 producing horizons 1450'-2400'. Direct offset upstructure from 400-bbl. well. P. O. Box 1134, Tulsa, Okla.

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PRODUCING OR NONPRODUCING
Texas, New Mexico, Oklahoma, Louisiana and Illinois
20 Years Experience
Inquiries Invited
B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

HOMER L. FITCH, GEOPHYSICIST AND LOCATION ENGINEER
WHY drill dry holes? Our method only locates structures which contain oil or gas. Drawer 711, Brownsville, Texas.

A GOOD buy: Thirty acre, 10 year lease, semi-proven, Shelby County, Texas, close up to production, directly between two new deep tests. This is a real bargain. Price: $5 per acre. Act quick!
C. A. PARKER
Box 451, Center, Texas.

EAST Texas Lease, nine year run, near Magnolia, Humble Oil, $1 acre.
LAHM, 2931 Missouri, St. Louis, Mo.

NOTICE OF BANKRUPT SALE
Porter Jerry Lease, 39 acres, 7 miles East of El Dorado, Arkansas in Rainbow Field; two wells producing 50 barrels per day; excellent equipment. Bids will be received by undersigned for submission to the Court on Friday, May 9, 1941, 10 oclock A.M. Terms: Cash, or part cash with proper oil payment and security. Sale subject to authority and approval of the Court which may reject all bids. If interested, further information may be obtained from Victor C. Smith, Trustee in Bankruptcy, J. R. Lockhart, Bankrupt, 1400 N. West Ave., Phone 1529, El Dorado, Arkansas.

ELLIS CO. KAN. 160. Farmout deal Jefferson Co. Cheap leases. 40 acre tracts adjoins Magnolia block, McLouth field. Harry Haynes, Grantville, Kan.

Leases and Drilling Blocks

WILL sacrifice for quick sale account of health, Lea County, New Mexico 40 acres each Sections 15 and 21, 17S-36E. Lock Box 126, Vinton, Va.

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ANDREW J. BARRETT
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WE MAINTAIN A MARKET FOR REGISTERED DEALERS IN ALL TYPES OF OIL ROYALTIES
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522 Fifth Ave., New York, N. Y.

I OFFER — Production Royalties in Nueces County, Texas. Monthly income. John P. Stouppas, 38 S. Watt Street, Youngstown, Ohio.

Mining Opportunities

WANTED person with $1500, active or silent, join in mining cinnabar (mercury) now $2.40 lb. Rich, old producer southwestern Colorado. Box A-471, The Oil and Gas Journal, Tulsa, Okla.

Ranches—Farm Lands

WYOMING RANCH — STOCKED. EQUIPPED
10500 acres deeded, 6320 acres leased, fine modern improvements, fine hay meadows, excellent water rights, lakes, streams, springs, timber, Forest Permit, joins Reserve, fishing, hunting, 1400 head cattle, 150 head horses. Ideal for Dude or Guest Ranch. A. J. Simonson Co., Cooper Bldg., Denver.

WE HAVE assembled several hundred choice farm and ranch properties located throughout Texas, Oklahoma, New Mexico and Colorado, priced below present market with reasonable terms if desired. Write today for our farm lands and ranch lands booklet containing full descriptions, prices and terms. J. C. MYTINGER REALTY COMPANY, P. O. Box 1190, Wichita Falls, Texas.

Legal Blanks

BURKHART'S legal blanks and genera. forms serving Mid-Cont. oil field since 1908—Okla. Kans. N. Mex. Tex. Ala. Ark. Fla. Ga. Ill. Ind. Ky. La. Mich. Miss. Mo Neb. N. Dak. Tenn. Wyo. Free catalog samples on request. Burkhart Ptg. & Sta Co., 115 S. Cinn., Tulsa, Oklahoma.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G Guyer, Inc., Wilmington, Delaware.

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

Help Wanted

SALESMAN experienced in sale seamless steel tubing and pipe, alloys and carbon grades, or man with sales experience steel commodity or steel specialty selling. Write, enclosing full particulars. Box A-452, Oil and Gas Journal, Tulsa, Okla.

SALES Representatives with established production clientele and other production lines wanted to represent old Mid-Continent Manufacturer on Gulf Coast and in Illinois. Give full details and references in first letter. Address Box A-450, The Oil and Gas Journal, Tulsa, Okla.

WANTED experienced refinery designing draftsman, permanent. Salary. Box A-436, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER with experience in oil refinery design and construction. Location Middle West. State age, education, experience, and salary desired. Box A-473, The Oil and Gas Journal, Tulsa, Okla.

MACHINIST capable of maintaining Worthington BG and CG gas engines, centrifugal and reciprocating pumps including hot oil pumps, also operation machine shop tools. Refinery experience preferred. Open shop. Box A-472, The Oil and Gas Journal, Tulsa, Okla.

ESTABLISHED MANUFACTURER'S Representatives: with established production clientele and other production lines wanted to handle product of old Mid-Continent Manufacturer on Gulf Coast and in Illinois. Give full details and references in first letter. Address Box A-450 The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED: Capable and technically trained refinery superintendent. Give experience and qualifications. Answers will be held confidential. Address Box A-470, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

GRADUATE ME desires position Dallas or vicinity. Two years mechanical drafting and two years refinery design drafting at which now employed. Prefer refinery engineering. Box A-461, The Oil and Gas Journal, Tulsa, Oklahoma.

STEADILY employed land man, 33 years old, excellent draftsman, good typist, experienced in scouting, leasing and curing titles, desires connection with good, small oil company. Write Box A-460, The Oil and Gas Journal, Tulsa, Oklahoma.

Oil Industry Printing

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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WE ARE interested in buying for cash 100 to 150 tons, of light used, fishing and drilling cable tools, all kinds, suitable for spudders to drill up to 2,000 feet deep. Prices by the ton F.O.B. cars, not to exceed $20.00 per ton. Buyer will inspect personally. Will leave Cuba about May 18. Write for detailed list and specifications to: Oil Well Drilling Co., Apartado No. 15, Los Arabos, Cuba.

WANTED: All makes of used Diesel Engines, preferably "Caterpillar" Diesels. Write price, condition and location to Fabick Tractor Co., Box 503, Salem, Ill.

WANTED:
USED DRILLING LINES
Sizes ¾", ⅞" and 1". Not necessarily long lengths.
M. ZLOTNICK
499 Canal St. New York, N. Y.

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3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

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We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

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Tulsa, Oklahoma